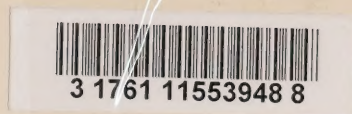
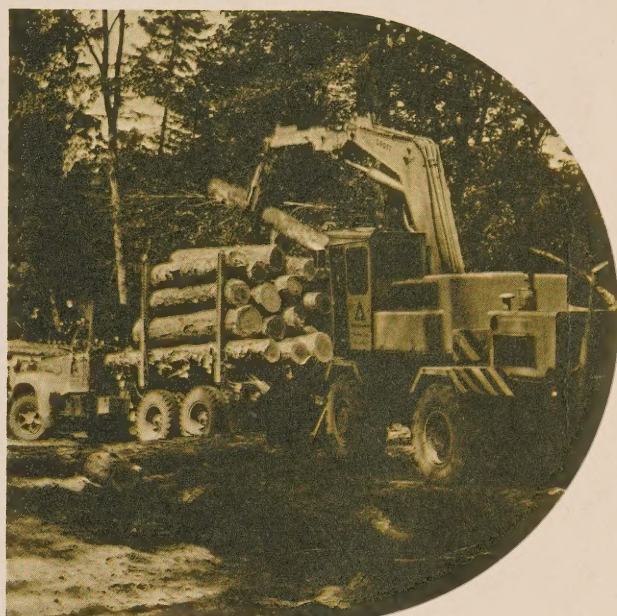


Economic Indicators in Forestry and Forest-based Industries in Canada: 1961/69

Canada. Canadian Forestry Service
Publication, no. 1297
Government
Publications



by James G. Bowland



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ECONOMIC INDICATORS IN FORESTRY AND
FOREST-BASED INDUSTRIES IN CANADA:
1961/69

by

James G. Bowland
Forest Economics Research Institute

Résumé en français

DEPARTMENT OF THE ENVIRONMENT
Canadian Forestry Service
Publication No. 1297
Ottawa, 1971

ECONOMIC INDICATORS IN FORESTRY AND
FOREST-BASED INDUSTRIES IN CANADA
1969-70

Published with the authority of the
Minister of the Environment
Ottawa, 1971

INFORMATION CANADA
OTTAWA, 1971
Catalogue No. Fo.47-1297



ABSTRACT

This report presents a factual summary of national trends in production, productivity, manpower and prices in logging, wood products and paper and allied industries during the period 1961 to 1969 and when necessary to 1968. It examines developments in these industries, mainly in terms of physical quantities, within the context of trends in each of the five major regions in Canada.

Output in the logging industry (proper) increased at an average annual rate of 2% over the period 1961 to 1968. Increases in output were sustained by a continued shift to mechanization in woods operations that supported a 6% average annual increase in productivity. Employment followed an irregular upward path in the early part of the period then tapered off until 1966 when it began declining at an average of 6% a year. Average weekly wages and salaries moved up by 7% a year during the period. Log prices rose at an average annual rate of 4%.

In the sawmill industry output of lumber increased at an average annual rate of 4% from 1961 to 1969 inclusive. Most of the increase was attributable to a 3% annual gain in productivity. Employment in the wood products industry of which sawmilling is the major component, moved up at an average rate of 1% a year over the period. Average hourly earnings in the wood products industry rose at an average rate of 6% a year. Lumber prices registered average annual increases of 5%.

In paper and allied industries, shipments of newsprint advanced at an average annual rate of 4% during the period 1961 to 1969. Productivity accounted for average annual increases of 1.4%. The major share of the increase in shipments stemmed from higher levels of employment which gained an average of 3% a year. Average hourly earnings in pulp and paper mills increased at an average annual rate of 6%. Prices of products of the industry followed a slow upward trend of 2% over the period. The cost of wood fibre at pulp and paper mills was modified by the utilization of increasing proportions of wood chips recovered from wood residues in the form of slabs and cull logs in sawmills, and cores from peeler logs and clippings from green veneer in veneer mills. The average annual rate of increase of values per cunit of pulpwood and wood residue used in pulp and paper mills was 2%.

RÉSUMÉ

Voici un rapport documentaire qui résume les tendances nationales sur la production, la productivité, la main-d'oeuvre et les prix concernant l'exploitation du bois d'oeuvre, les produits du bois et industries connexes. Le rapport couvre la période de 1961 à 1969 en général et il analyse les progrès accomplis par ces industries en termes surtout de quantités vis-à-vis les tendances régionales dans chacune des cinq régions principales du Canada. Il étudie aussi les rapports entre les changements annuels de la production (en termes de pourcentages) et la productivité et l'emploi, et aussi les salaires et les prix.

De 1961 à 1968, la production dans l'industrie du bois d'oeuvre proprement dite augmenta de 2 p. 100 par année, en moyenne; la plus grande mécanisation des opérations forestières ne permit pas peu d'en arriver à ce résultat vu que par elle la productivité annuelle monta en moyenne de 6 p. cent. Au début, la main-d'oeuvre augmenta irrégulièrement puis se maintint à peu près au même niveau jusqu'en 1966, année où débuta un net déclin au taux de 6 p. 100 par année. Pendant la période étudiée les salaires hebdomadaires moyens montaient annuellement de 7 p. 100 et le prix des billes de 4 p. cent.

Dans l'industrie des sciages, le rendement de bois d'oeuvre depuis 1961 jusqu'à 1969 s'accrut au taux annuel de 4 p. 100; l'augmentation de productivité, qui s'éleva à 3 p. 100 par année, contribua le plus à une telle augmentation de rendement. Durant la même période, la main-d'oeuvre dans l'industrie des produits du bois (les sciages en sont la partie constituante majeure) augmenta de 1 p. 100 par année, tandis que les salaires horaires moyens dans cette industrie grandissaient chaque année de 6 p. 100, et que le prix du bois d'oeuvre montait de 5 p. cent.

Dans les industries des papiers, cartons, etc., la production de papier-journal progressait annuellement de 4 p. 100 en moyenne, et la productivité de 1.4 p. cent. Cette augmentation de production vient surtout du fait que la main-d'oeuvre monta chaque année de 3 p. cent. Les salaires horaires dans les usines de pâtes et papiers accusèrent une augmentation annuelle moyenne de 6 p. 100, pendant que le prix des produits livrés se limitait à une augmentation annuelle de 2 p. 100 seulement. En ce qui concerne les coûts, les fibres de bois dans les usines de pâtes et papiers coûtèrent moins cher, vu que l'on fabriqua en proportion accrue des copeaux provenant de déchets de scieries tels que les dosses et les billes refusées; provenant aussi des déchets d'usines de placages (noyaux résiduels, bouts de billes, arrondis). La valeur moyenne de bois à pâte et résidus de bois utilisés par les usines de pâtes et papiers monta au taux moyen annuel de 2 p. 100 (par cunit).

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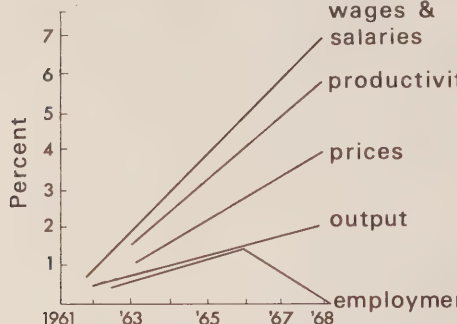
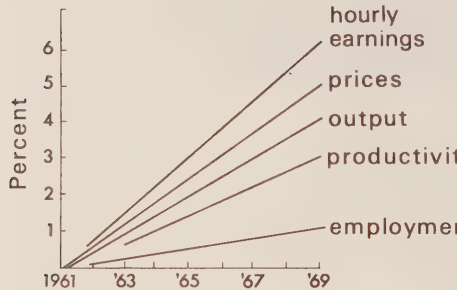
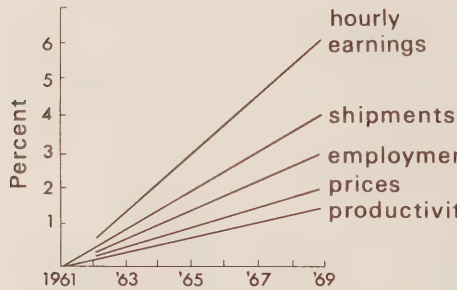
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ACKNOWLEDGMENT

The cooperation of officers of the Dominion Bureau of Statistics and in particular of the Forestry Section, Manufacturing and Primary Industries Division, is acknowledged.

PART I.
REVIEW OF ECONOMIC INDICATORS

CHART A. TRENDS IN ECONOMIC INDICATORS IN FORESTRY
AND FOREST-BASED INDUSTRIES, CANADA

<p>Logging</p>  <p>Percent</p> <p>weekly wages & salaries</p> <p>productivity</p> <p>prices</p> <p>output</p> <p>employment</p> <p>1961 '63 '65 '67 '68</p>	<p>Logging</p> <table><tr><th></th><th>Period</th><th>Average annual rates of change (compounded)</th></tr><tr><td>output</td><td>1961-68</td><td>2</td></tr><tr><td>productivity</td><td>1963-68</td><td>6</td></tr><tr><td>prices</td><td>1963-68</td><td>4</td></tr><tr><td>weekly wages</td><td>1962-69</td><td>7</td></tr><tr><td>employment</td><td>1966-69</td><td>-6</td></tr><tr><td></td><td>1962-66</td><td>2</td></tr></table>		Period	Average annual rates of change (compounded)	output	1961-68	2	productivity	1963-68	6	prices	1963-68	4	weekly wages	1962-69	7	employment	1966-69	-6		1962-66	2
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weekly wages	1962-69	7																				
employment	1966-69	-6																				
	1962-66	2																				
<p>Sawmills</p>  <p>Percent</p> <p>hourly earnings</p> <p>prices</p> <p>output</p> <p>productivity</p> <p>employment</p> <p>1961 '63 '65 '67 '69</p>	<p>Sawmills</p> <table><tr><td>output (lumber)</td><td>1961-69</td><td>4</td></tr><tr><td>productivity</td><td>1963-69</td><td>3</td></tr><tr><td>prices</td><td>1961-69</td><td>5</td></tr><tr><td>hourly earnings</td><td>1962-69</td><td>6</td></tr><tr><td>employment (wood products)</td><td>1962-69</td><td>1</td></tr></table>	output (lumber)	1961-69	4	productivity	1963-69	3	prices	1961-69	5	hourly earnings	1962-69	6	employment (wood products)	1962-69	1						
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<p>Pulp and Paper Mills</p>  <p>Percent</p> <p>hourly earnings</p> <p>shipments</p> <p>employment</p> <p>prices</p> <p>productivity</p> <p>1961 '63 '65 '67 '69</p>	<p>Pulp and Paper Mills</p> <table><tr><td>shipments (newsprint)</td><td>1961-69</td><td>4</td></tr><tr><td>productivity</td><td>1961-69</td><td>1.4</td></tr><tr><td>prices</td><td>1962-69</td><td>2</td></tr><tr><td>hourly earnings</td><td>1962-69</td><td>6</td></tr><tr><td>employment</td><td>1962-69</td><td>3</td></tr></table>	shipments (newsprint)	1961-69	4	productivity	1961-69	1.4	prices	1962-69	2	hourly earnings	1962-69	6	employment	1962-69	3						
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prices	1962-69	2																				
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employment	1962-69	3																				

SECTION 1. - THE TIMBER RESOURCE BASE

(See Tables 1-2)

In 1968 the volume of merchantable timber (4 inch dbh and over)¹ in Canadian forests was estimated at 6,294 million cunits, about 74% of which were conifers. Data on the distribution of these forests indicate that about 50% of the standing volume is in British Columbia, and that the Prairie Region, Ontario and Quebec each have from 12 to 15%. Some 6% is in the Atlantic Region and 3% in the Yukon and the Northwest Territories.

Most of the merchantable timber having 10 inch dbh and over, the size range most suitable for sawmilling, is in British Columbia. Some 64% of the Canadian total is concentrated there, and this in turn accounts for a relatively high average number of cunits of merchantable timber per acre of productive forest land. In British Columbia this average amounts to about 43 cunits per acre and compares with a national average in Canada of more than 14 cunits per acre.

The large volume of wood per acre in British Columbia, coupled with a moderate climate that permits logging for virtually the whole of each year, enables a relatively high level of productivity to be achieved in the forestry and forest-based industries of that province and indirectly supports a comparatively high wage-rate structure.

SECTION 2. - LOGGING ACTIVITY

(See Tables 3-6)

During the 8-year period 1961-1968, the output of roundwood in primary forest operations increased at an annual average rate of 3.3% to a 1968 total of 40 million cunits (Figure 1). At this level of production the rate of withdrawal of roundwood from merchantable timber stands² amounted to approximately 0.7%. This represents a gross average of roundwood removals calculated as a percentage of all species of standing merchantable timber on the basis of volume of wood.

Regionally, the rate of utilization of merchantable forest was lowest in the Prairie Region, where it amounted to 0.3%. Next in ascending order was Ontario with 0.5%. In British Columbia where production moved up at an average annual rate of 5.5% over the 8-year period, utilization was 0.6%; and in Quebec there was a slightly higher rate of withdrawal, namely, 0.8%. In the Atlantic Region production of roundwood levelled off between 1961 and 1968 at 1% of the merchantable forest.

¹In British Columbia, 7.1 inch dbh and over (mature stands only). The volume figure excludes Labrador, Yukon and Northwest Territories, and includes inventoried forests only. The percentage distribution is based on the 1963 National Forest Inventory.

²These are found in all productive forests and, in terms of acreage, are about 75% accessible.

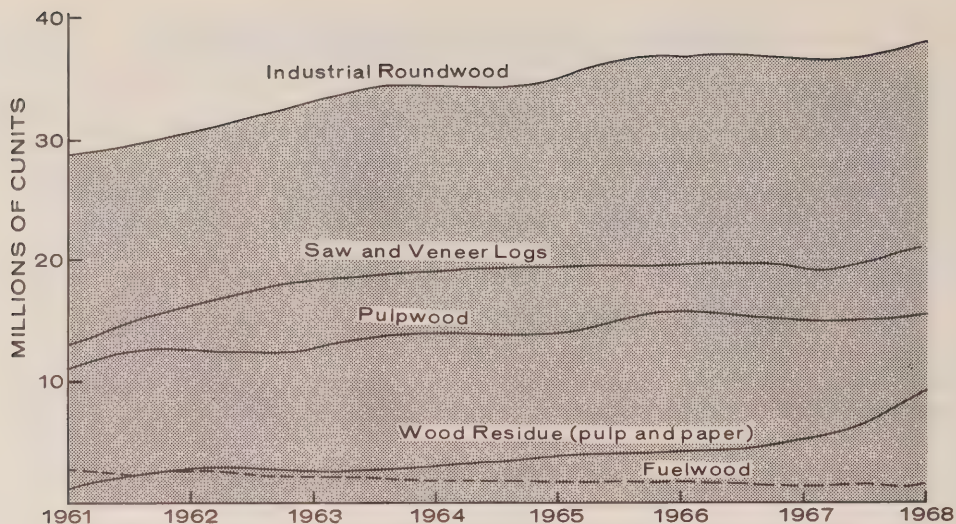


Figure 1. Utilization of roundwood and wood residue, Canada, 1961-1968.

Data on the utilization of industrial roundwood in major consuming industries indicate that in 1968 some 55% was used in woodworking plants and 41% was used in pulp and paper mills and that 4% was required by utilities, mines and other miscellaneous users of roundwood. Of industrial roundwood produced in 1968, 48% was shipped to sawmills, planing mills and millwork plants. The share used by plywood and veneer mills amounted to more than 4%, and that used by shingle mills to about 1%. These proportions in the distribution of roundwood to secondary industries have been relatively constant since 1962.

One of the notable developments in the utilization of wood during the years 1961-1969, has been the increasing rate at which wood residue is being used in pulp and paper mills. As a reflection of this trend, some 27% of the total wood fed to pulp and paper mills in 1969 consisted of wood residue. In 1961 the percentage was 13. The major part of this wood residue consists of slabs from sawmills and cores and clippings from veneer mills. These materials are converted to chips, then fed to pulp and paper mills. The size, concentration and proximity of sawmills and veneer mills to pulp and paper mills in British Columbia has enabled pulp mills to accelerate the process there, but the practice has been adopted also in other provinces in locations that favor integrated operations.

High-Density Hardwood Roundwood

Estimates of domestic production of high-density hardwood roundwood (industrial) place the figure at 2 million cunits in 1968 or 5% of the total production of industrial roundwood. By 1968 pulp mills were utilizing about 0.5 million cunits, which included chips converted from residues in lumber and veneer mills. This volume was about half the quantity of

high-density hardwood roundwood utilized by sawmill and millwork plants. The utilization of high-density hardwood by plywood and veneer mills at 180 thousand cunits in 1968 was slightly below the level of preceding years. In 1968, in addition to quantities utilized by industrial plants, about 1 million cunits of hardwood roundwood (including poplar) were cut for fuel-wood and for charcoal.

SECTION 3. - PULP AND PAPER MILL OPERATIONS

(See Tables 7-10)

The volume of wood used by pulp and paper mills in the form of pulpwood and wood residue rose by an average annual rate of 7% during the 9-year period 1961-1969 to 23.8 million cunits in the final year. As noted earlier, a large part of this increase was sustained by an acceleration in inputs of wood residue, which, over the comparable period, amounted to an average annual rate of 18%. Pulpwood was utilized at a year-over-year rate of slightly more than 5%.

The tree species used in the form of pulpwood in pulp and paper mills are 93% softwoods of which spruce, balsam and hemlock are the most significant. Among the broad-leaved trees that make up the remaining 7% poplar is the main species.

In gross terms 1 cunit of wood is converted into 0.8 tons of wood pulps in pulp and paper mills. Preliminary estimates for 1969 place output of wood pulp at about 18.6 million tons representing an average annual increase of 6% from 1961.

Reflecting a strong demand for wood pulp in the international market, exports advanced at an average annual rate of 9% and by 1969 reached 5.8 million tons, accounting for 31% of Canadian production.

SECTION 4. - MARKET TRENDS IN PULP AND PAPER PRODUCTS

(See Tables 11-19)

The principal impetus to growth in the output of wood pulp has stemmed from a continuing buoyant demand for kraft (sulphate) pulp, which is the most versatile of any of the pulps. The end uses of this pulp vary from its use as an additive when in bleached form, to its use as groundwood pulp for newsprint, to fabrication in an unbleached form into linerboard, corrugating mediums and kraft paper for shopping bags and other packaging materials requiring high tensile and burst strength. During the 9-year period 1961-1969, production rose at an average annual rate of 13% to 6.9 million tons.

Concurrently the remaining chemical pulps increased at an average annual rate of 2% to 3.6 million tons, and mechanical (groundwood) pulp, which makes up about 80% of the inputs for newsprint, advanced at an average annual rate of 4% to 8 million tons in 1969.

In the export market, kraft (sulphate) pulp accounts for 78% of all wood pulp shipments, and, at an average annual increase of 14%, has constituted virtually the whole of the rise in exports of wood pulp over the years from 1961 to 1969 inclusive.

With the exception of Central and South America, where there has been a slight decline in shipments, all world markets have shared in the continued expansion of wood pulp sales. The United States market, which absorbs 66% of Canadian exports of wood pulp, has maintained an upward trend in purchases of 7% a year, on the average. The European market, where export sales are concentrated to a significant extent in the European Economic Community, represents 21% of the total exports. This market increased its purchases three fold over the 9-year period. The Asian market, almost wholly in Japan and representing less than 10% of the exports of wood pulp, increased its purchases four fold (23% annually) from 1961 to 1969.

Wood pulp is the primary material used in the production of two distinct groups of consumer goods. One group is in the communications field and embraces newsprint and fine, book and writing papers. The other is in products that have household and commercial applications. These products include tissue and sanitary paper, wrapping paper, paperboards and building boards and paper. Each of these six broad classes in the two groups displays patterns of mill shipments and distribution that reflect conditions and developments in different end-use markets; and trends in each of the classes are reviewed separately. As in the case of wood pulp, exports represent significant proportions of Canadian mill shipments, particularly newsprint. Growth patterns among some classes, however, are somewhat more modest than those for wood pulp but nevertheless follow consistently upward movements.

Shipments of newsprint from Canadian paper mills to domestic and export markets increased at an average annual rate of 4% from 1961 to 1969. A cyclical peak was reached in 1966 and, after a slight decline in 1967, some recovery occurred in 1968 and expanded further in 1969 to a total that topped the 1966 level. In 1969 mill shipments totalled 8.9 million tons, of which 92% were exported. The upward trend in exports over the period under review was at a slightly slower pace than that in mill shipments. The differential was absorbed by domestic consumption which rose at an average annual rate of 7%. The increase in domestic requirements can be related to per capita consumption, which moved up from 46 pounds per person in 1961 to 67 pounds in 1969 (Figure 2).

After touching a high point in 1966, exports to the United States tapered off as new newsprint mills in that country began production, but in 1969 Canadian exports were back close to the 1966 level. While exports to the United States in 1969 still represented 79% of all Canadian newsprint exports, overseas markets became more diversified. Exports to the European Economic Community have slowly but steadily expanded, and in the late 60's almost matched a slight decline in sales of newsprint to the

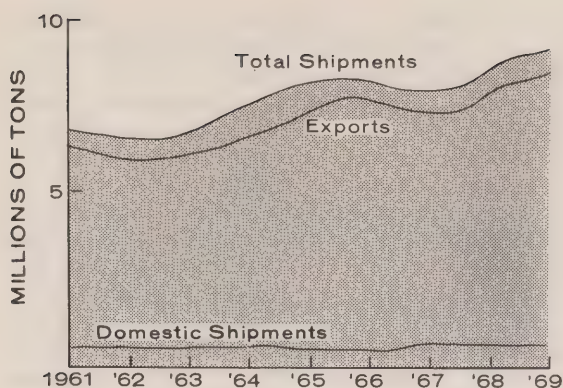


Figure 2. Shipments of newsprint, Canada, 1961-1969.

United Kingdom. The most notable increases in export markets have been to Asian and South American countries, where shipments increased two and a half times during the 9-year period. Taken together these two markets are now greater than the European market. Other important markets are Central America and Australia, where aggregate sales rose by more than 3% per annum from 1961 to 1969.

Mill shipments of fine, book and writing papers, which form the second class of paper-based media in the communications field, increased at an average annual rate of 7% from the level of 1961 to 742,000 tons in 1969. A significant part of this upward trend was attributable to exports which on average advanced 18% a year. Domestic consumption increased by the more moderate rate of 5%. On a per capita basis, consumption of these papers in Canada amounted to 52 pounds in 1969, higher by 11 pounds per person than in 1961.

Demand for paper-based commodities used in household and in commercial and industrial establishments in domestic and international markets, has supported upward movements in mill shipments of four main classes of commodities processed by pulp and paper mills. Mill shipments of tissue and sanitary paper rose by 5% per annum over the 9-year period to 210,000 tons in 1969. Exports increased at an average annual rate of 11% and in 1969 represented about 8% of total shipments. Imports amount to about half the volume of exports. After average annual increases of more than 5% Canadian consumption reached a plateau in 1968 and 1969, when quantities used per person amounted to 19 pounds, or 4 pounds more per person than in 1961. The distribution of wrapping paper displayed a somewhat similar pattern. Buoyed by a strong export market, mill shipments followed a consistently upward volume at an average annual rate of 6% between 1961 and 1969. Over the comparable period, exports increased by 11% on average a year, and in 1969 represented 20% of mill shipments. Domestic consumption increased by 5% annually over the 9-year period to reach a new high of 410,000 tons in 1969. During the last mentioned year consumption per person amounted to 39 pounds as against 30 pounds in 1961.

Among the board products, mill shipments of paperboard from pulp and paper mills exceeded 1.7 million tons in 1969, after a steady increase of about 7% per annum from 1961. During the same period, exports, which currently absorb some 16% of mill shipments, increased at an average annual rate of 13%. Domestic consumption in 1969, at 1.6 million tons, was up by 500,000 tons from 1961 reflecting an average annual increase of more than 5%. Per capita consumption amounted to 149 pounds in 1969 compared with 112 pounds per person in 1961. Mill shipments of building boards and paper, the second major class of boards produced in pulp and paper mills, displayed a cyclical pattern during the period under review. From a low point in 1961 shipments went up at an accelerated rate to a high of 392,000 tons in 1964, then declined slightly to 363,000 tons in 1966 as particleboard, one of the recent building panel boards manufactured outside the pulp and paper industry, began to become more widely accepted in the Canadian market. Mill shipments of building board and paper resumed an upward trend in the following 2 years, sustained in part by a strengthening export market. Domestic consumption moved up at an average annual rate of 3.5% over the period under review.

SECTION 5. - MARKET TRENDS IN LUMBER AND ALLIED PRODUCTS

(See Tables 20-22)

Under the impetus of a strong export market, production of softwood lumber increased at an average annual rate of 4% over the 9-year period 1961-1969. Preliminary data for 1969 indicate that output totalled some 11 billion board feet in that year, when 71% of output was concentrated in British Columbia. Although exports fluctuate in terms of both volume and direction, the general trend has been upward at an average annual increase of 4%. In 1961 exports accounted for 62% of Canadian output, in 1968 for about 65% and in 1969 for some 61%. Domestic consumption reached a peak in 1965 when 4.1 billion board feet were used at a per capita rate of 206 board feet. Estimates for 1969 place domestic consumption at 3.9 billion board feet representing 187 board feet per person. The strength of domestic consumption of softwood lumber, in the face of only a slight rise in completions of non apartment residential units between 1961 and 1969, as well as competition from construction-grade plywood which is now one of the main sheathing materials in houses, reflects in part the evolution of modern materials-handling methods such as palletization and containerization. Softwood lumber is used extensively in this relatively new market (Figure 3).

Hardwood lumber, which excludes hardwood flooring and spoolwood, is used primarily for office and household furniture and also for shipping containers and pallets. Canadian production increased at an average annual rate of some 5% from 1961 to 1968, when output totalled 589 million board feet. Over the period, trade increased each year, mainly that to the United States, and in 1968 represented 27% of production. Imports of hardwood lumber, principally those species not indigenous to Canada, increased at the slightly slower pace of 3% per annum. The outcome of these gradual upward movements in production and trade was that domestic consumption increased at an average annual rate of 5% to 540 million board feet in 1968. At that level per capita consumption was 25 board feet as compared with 22 board feet per person in 1961.

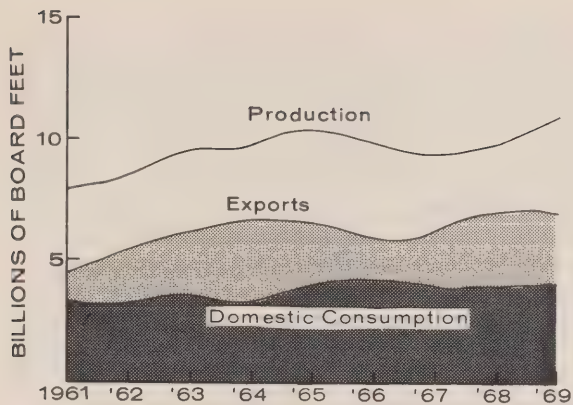


Figure 3. Production and distribution of softwood lumber, Canada, 1961-1969.

Shipments of hardwood flooring advanced to a high point of 81 million board feet in 1965, then declined by 16 million board feet in the following 3 years. Shipments of hardwood floor tiles became significant in 1962 when 7 million square feet were sold. The quantity tripled to 23 million square feet in 1966 and then declined slightly to 20 million square feet by 1968. Shipments of shingles and shakes levelled off at 2.6 million squares during the 3-year period 1965-1967, then rose to 3 million squares in 1968.

SECTION 6. - MARKET TRENDS IN PLYWOODS AND VENEERS

(See Tables 23-26)

One of the most significant developments in the wood processing industries in Canada has been the emergence of the manufacture of construction-grade plywood as a major industry. About 93% of the output of construction-grade plywood is made from softwoods such as Douglas-fir, balsam fir, pine and spruce, and mills in British Columbia produce some 93% of Canada's construction-grade plywood. The remaining 7% of output is processed from poplar, virtually all of which is produced east of the Rockies.³

During the 9-year period 1961-1969, production of softwood plywood increased at an average annual rate of more than 7%, while the output of poplar moved up and down in 3-year cycles with no definite upward trend. By 1969 total production of construction-grade plywood amounted to 2.2 billion square feet (3/8 inch basis, unsanded), which was almost one billion square feet above the level of 1961. In 1969 exports of softwood plywood comprised 24% of production and over the 9-year period had tripled to 483 million square feet. During the same period domestic consumption rose at an average annual rate of more than 5% to 1.7 billion square feet, or 82 square feet per capita.

³For an appraisal of developments in the plywood industry see The Use and Production of Construction-Grade Plywood in Canada, Forest Economics Research Institute, Forestry Branch, Department of Forestry and Rural Development, Departmental Publication No. 1233 (1968).

The manufacture of plywood is broadly a two-stage process involving first the cutting of veneer sheets from logs and secondly the bonding of the sheets to core stock to form plywood panels of various thicknesses. Typically these two stages are performed in a sequential series of inter-related processes within individual plants. Within the past decade, however, the softwood plywood and veneer industry in British Columbia has extended its operations into the interior of the province, and one of the characteristics of this development has been the erection of specialized plants that process veneer only, for sale to established plywood plants that require supplemental supplies of veneer sheets. Reflecting this current pattern in the structure of the industry, the output of veneer for sale to plywood plants, which excludes intracompany transfers, advanced at an average annual rate of 26% between 1962 and 1969. Over the corresponding period, exports, mainly high-grade face veneers, moved up and down in an irregular pattern and in 1969 amounted to 26% of production. Imports consist of low-grade core veneers, and in 1969, the first year for which this commodity was recorded separately, the quantity amounted to 167 million square feet, about the same volume as exports. After a five fold increase in domestic disappearance between 1962 and 1967, the volume of shipments of softwood veneers to domestic plywood mills declined slightly and in 1969 stood at 646 million square feet.

The hardwood plywood and veneer industry (excluding poplar) operates in the Great Lakes-St. Lawrence Forest Region of Ontario and Quebec, and the mills extend in a Y-formation from a band around the Georgian Bay-Lake Huron shoreline, then along the Ottawa River drainage system to a fairly narrow strip on either shore of the St. Lawrence east to Rivière du Loup. A hardwood veneer plant is also situated at Napadogan, New Brunswick, in a hardwood forest stand of the Acadian Forest Region. There is roughly an equal distribution of hardwood plywood and veneer plants between Quebec (23) and Ontario (29); and in Ontario the greatest concentration, numbering 18, is in the Huron-Ontario Forest Section east of Lake Huron. There, as in the case of Quebec, the mills are in close proximity to sources of supply of logs as well as to furniture and woodworking plants. In general, some 26% of hardwood-plywood production is used for prefinished and serrated paneling, some 45% is used for doorskins, and the remaining 29% for office furniture and interior panels of trailers and mobile homes.

Unlike construction-grade plywoods, which fulfil utility functions in buildings, hardwood plywoods are used for decorative purposes, and many variations in textures and overprinted wood grains have been developed to meet a wide range of consumer preferences. Concurrently the technology of overprinting and embossing hardboards, as well as imports of low-priced Philippine and Japanese mahogany (lauaan) and African mahogany (Khaya) have enabled these products to penetrate markets for which domestic hardwood plywood is suitable but higher priced. The factors of restricted market and variability in surface finishes have compelled domestic hardwood plywood mills to adapt to relatively short runs that resemble custom manufacture. This in turn has had two major effects: (1) imports have increased at a faster rate than production in recent years; (2) major emphasis has been placed on the production of hardwood veneers for resale, the majority of which are exported to the United States.

The effect of these diverse influences has been to inhibit growth in the industry.⁴ Production of hardwood plywood (excluding poplar) has levelled off in recent years and in 1969 stood at 174 million square feet (1/4 inch, sanded both sides) which was about the same level as in 1964. Exports amounted to 35 million square feet in 1969, or 20% of production. Imports, on the other hand, had reached 262 million square feet by 1969, an amount which exceeded domestic production. Over the 8-year period, 1962-1969, imports increased at an average annual rate of 13%. Apparent domestic consumption totalled 387 million square feet in 1969, representing an average annual increase of more than 9% from 1962. Per capita consumption reached 18 square feet in 1968 and remained at that level in 1969.

Production of hardwood veneers for resale totalled 1.1 billion square feet in 1969, about the same level as in 1964. Exports, which had moved up at an annual average rate of close to 5% amounted to 769 million square feet in 1969 or 71% of domestic production. Imports of hardwood veneer in 1969, at 245 million square feet, represented about one-third of exports. Domestic disappearance of 526 million square feet in 1969 amounted to 50% of domestic production.

SECTION 7. - MARKET TRENDS IN MILLWORK, BUILDING BOARDS AND PACKAGING PRODUCTS

(See Tables 27-33)

One of the rapidly evolving changes taking place in residential construction is the trend towards off-site assembly of building components in millwork and other woodworking plants. Many of the larger contractors have established prefabricating plants where components are manufactured in modules at off-site locations for assembly at construction sites. Although components built by contractors for their own use are excluded from surveys, data have been collected on the value of buildings and wood-based components manufactured for sale to building contractors. As factory-built buildings and components are likely to grow in prominence, a few series have been brought together to provide indications of the position of these products in the building industry.

In 1968 shipments of prefabricated buildings for resale including houses, cottages, and other buildings and components were valued at \$99 million, almost four times the 1961 value. Shipments included 8,500 houses and 2,200 cottages, and in the case of houses, represented 11% of starts of all single-detached dwellings in 1968.⁵

⁴For a report on operating problems in the industry see A Study of the Canadian Hardwood Plywood and Veneer Industry, Wood Products Branch, Department of Industry, Trade and Commerce, Ottawa, March 1969.

⁵In 1964, it was estimated that, in addition to "open-market prefabricators," larger project builders were assembling 5,000 prefab houses a year. See R.E. Platts, Prefabrication in Canadian Housing, Technical Paper No. 172, Division of Building Research, National Research Council of Canada, Ottawa, March 1964, p.4.

In value terms shipments of wooden mouldings and kitchen cabinets doubled during the 8-year period 1961-1968 to \$27 million and \$38 million respectively. When price increases for these items are discounted, the rise in shipments compares favorably with that in housing starts, which in physical units increased by 56% over the corresponding period. The value of factory-built roof trusses, rafters and beams, and flush-type doors rose by about 50% during the period, suggesting that output approximated the pace of residential building. Data on the value of shipments of window sashes or units, of window or door frames, and of table, bar or counter tops indicate a levelling-off in demand for these wood-based building components, as nonwood innovations gain increasing acceptance in end-uses adaptable to standardized, unitized fixtures.

Building Boards

Among the building boards other than plywood, low-density building board panels of various kinds for interior finishing and exterior sheathing totalled about 0.5 billion square feet ($\frac{1}{2}$ inch thickness equivalent) in 1969, higher by 100 million than in 1962. Tar and asphalted sheathing boards, which account for more than a quarter of these softboard building boards, have increased steadily at an average annual rate close to 5% in recent years.

Output of hardboard ($\frac{1}{8}$ inch thickness equivalent) exceeded 600 million square feet in 1969. Of this total, 171 million square feet, or 27% were exported. Imports of specialty types of hardboard amounted to 63 million square feet, and domestic consumption, which had been rising about 7% a year on average, totalled 470 million square feet in 1969.

Domestic consumption of particleboard increased at an average annual rate of 20% over the 6-year period 1964-1969, and in the last year stood at 200 million square feet ($\frac{5}{8}$ inch thickness equivalent). Some 32 million square feet, or 16% of this quantity were imported. The international market is highly competitive in this board, and Canadian exports have been of a token nature up to the present.

Altogether, domestic consumption of building board panels⁶ including construction-grade and decorative (heavy hardwood) plywoods, reached 3.3 billion square feet (surface measure) in 1969, or approximately 160 square feet per person. This compares with 2.6 billion square feet in 1964, when per capita consumption was 137 square feet. The over-all increase of 27% during the 6-year period was double the percentage change in domestic consumption of softwood and hardwood lumber, including flooring and floor tiles, which rose by 13% from 4.0 billion board feet in 1964 to 4.6 billion board feet in 1969. In the latter year, per capita consumption was 220 board feet.

⁶In 1969 production of "high-pressure decorative laminate sheets" (formica, arborite, etc.) for use as counter and table tops and paneling, totalled 62.4 million square feet ($\frac{1}{8}$ inch). Technical aspects of these paperbacked phenolics and of wood plastics (particleboard) are assessed in R.E. Platts, The Role of Plastics in House Structure, Technical Paper No. 176, Division of Building Research, National Research Council of Canada, Ottawa, April 1964, p. 14 and 15.

Distribution Patterns

Products manufactured in the wood and paper and allied industries fulfil a wide range of functions, and the products themselves may be classified broadly as producer and consumer durables (lumber, plywood, etc.) and producer and consumer nondurables (corrugated boxes and paper, etc.). Many of the products are used by both producers and consumers, and the extent to which they are used by each of these groups of final end-users, influences the selection of channels of distribution employed by manufacturers. Another factor is the significance of export markets among selected commodities (see Table 31).

In the domestic market wholesalers are a major channel of distribution for saw and veneer and plywood mills, hardwood flooring factories, woodenware, asphalt roofing and miscellaneous paper converters. Retail establishments are important outlets for products processed in sash, door and planing mills, and for hardwood flooring, woodenware, asphalt roofing and other paper converters. Shipments from mills of origin to "other manufacturing" plants are a large proportion of total shipments in the case of wooden boxes, wooden handles, cooperage, set-up and corrugated boxes and paper bags. "Other industry and business users" represent an important channel of distribution for sash, door and planing mills, hardwood flooring and miscellaneous wood industries.

In the export market, buyers in other countries account for 38, 45 and 77% of the sales of sawmills, pulp and paper, and shingle mills respectively.

Brokers, governments and branches of manufacturing plants are channels through which goods are shipped to domestic and export markets. Brokers and governments are important buyers of products of sash, door and planing mills. Branches or sales offices of manufacturing plants are among the principal distributors of veneer and plywood and pulp and paper.

Packing and Packaging Products

Estimates of the consumption of paper and wood packing containers and supplies by Canadian manufacturing industries in 1962 and 1966 indicate that for each of the 2 years the value was \$12 per \$1,000 worth of goods shipped. In absolute terms the total value was \$329 million and \$437 million in 1962 and 1966 respectively. The share of folding and corrugated boxes utilized in relation to total paper and wood packing supplies moved up from 60% in 1962 to 66% in 1966, while the share of paper bags, labels and wrappers declined slightly from 34% in 1962 to 27% in 1966. The proportionate value of wooden boxes, crates, barrels and pallets remained constant at 6 and 8% respectively in the 2 years.

Among nondurable-goods industries, the tobacco products industry expended \$35 per \$1,000 worth of products shipped in 1966 for paper and wood packing supplies, followed by the food and beverage industry, which spent \$31 per \$1,000 worth of goods shipped. The furniture and fixtures industry led the durable goods industries in expenditures on paper and wood packing supplies with \$15 per \$1,000 worth of goods shipped in 1966.

SECTION 8. - PRODUCTIVITY IN LOGGING, SAWMILLING AND PULP AND PAPER MILLS

(See Tables 34-35)

Productivity in logging as measured by deliveries of roundwood per man-hour paid to production and related workers, has shown a marked upward trend in most regions of Canada. In all regions from Quebec to British Columbia during the period 1963-1968, there was a decline in man-hours paid and an increase in deliveries of roundwood. In the Atlantic Region this pattern appeared only recently. Over-all, the increase in productivity in Canada averaged 6% per year in the 6-year period 1963-1968. The highest annual rate of increase occurred in Quebec with 10%, followed by the Prairie Region (9%), Ontario (8%), New Brunswick (7%), the Atlantic Region (6%) and British Columbia (1%).

Changes in productivity have been associated with the adoption of new types of mechanical equipment that have altered wood-harvesting systems. Available data suggest that increases in productivity have occurred over the span of a year and then remained at the higher level until the introduction of another mechanical innovation that in turn formed the nucleus for still newer systems. In 1964 and 1965 for example, tree-length cutting and skidding displaced a considerable amount of manual labor in the woods, and deliveries per man-hour moved up from 21 cubic feet in 1964 to 23 cubic feet in 1965. In 1967 new equipment enabled many woods operators to fell, limb, top and buck bolts at the stump, and deliveries increased by 1 cubic foot per man-hour from 23 in 1966 to 24 in 1967, and then to 28 cubic feet in 1968 as adoption of new types of equipment became more widespread.

In general there are four systems⁷ in use in logging operations that have had an impact on productivity. Briefly these may be classified as partially mechanized (65%-85% labor content), substantially mechanized (35%-55% labor content) and fully mechanized (15%-35% labor content).

The partially mechanized system consists of two sub systems known as short-wood and tree-length processes. The first, which has the higher labor content of the two, employs manual labor-using power saws to fell, limb, top and buck trees at the stump. The bolts are then stacked into piles at the stump and transported to primary landings at the roadside by prehaulers fitted with grapples for loading and unloading. The second sub system known as the tree-length method, also employs hand felling and limbing at the stump. The tree lengths are then transported from the felling area to primary landings by skidders. There the trees are hand-bucked into bolts and stacked for hauling to secondary landings.

The second system, the substantially mechanized one, also has two sub systems. One is similar to the tree-length method already described, except that a machine slasher replaces manual labor at the primary landing for the purpose of cutting trees into short lengths. The second sub system

⁷The systems described here are based on a diagrammatic chart prepared by the Logging Equipment Division, MF Industrial & Construction Machinery, Massey-Ferguson Limited.

is the whole-tree method. In this process the trees are hand-felled at the stump and skidded to primary landings. At roadside the trees are limbed, topped and bucked into piles by mechanical processors that may be stationary, semistationary or mobile.

When topography and surface terrain and scale of operations permit, the third system, classified as a fully mechanized system, may be adopted. One process in this system follows the same sequence as the whole-tree method. In place of manual labor at the stump, however, mobile feller-skidders fell trees mechanically. These machines then skid trees in bunches by bunks, grapples or choker devices to the primary landing, where they are mechanically stacked into piles of short lengths. This system has been adopted with modifications in the Interior of British Columbia as well as in the east. A second method that is fully mechanized processes trees into short lengths at the stump. The machines, which are known as harvesters, fell, limb, top and usually buck trees into short lengths at the stump. The bolts are then bundled and transported to the primary landing either by the harvester or by separate forwarders, which pile the bolts at primary landings before loading them on haul trailers for assembly at secondary landings.

A fourth system, which is unique to the Coastal area of British Columbia, where it has been established for many years, is spar-tree logging or cable yarding. In this system trees are felled, and then topped and limbed at the stump and subsequently transported by cable to log-assembly yards or ponds for onward disposition by water, rail or truck. A recent development in this system is the substitution of grapples for slings, which reduces labor content in transporting logs by cable to log-assembly yards.

The difference in forest characteristics and in logging operations between British Columbia and the region east of the Rockies may be illustrated by comparisons of deliveries of roundwood per man-hour paid in British Columbia with those in other provinces. In British Columbia in 1968, deliveries of roundwood per man-hour paid averaged 49 cubic feet. This was more than 50% above deliveries in the Prairie Region (30 cubic feet) and double the levels in the remaining regions.

Sawmilling and Planing

During the 6-year period 1963-1968, increasing proportions of sawn lumber were planed at sawmills. In 1963, the proportion of shipments of planed lumber from saw and planing mills was 65%. This increased to 72% by 1968. In the latter year the remaining 28% was shipped from sawmills, the point of primary processing, to be planed, and grade stamped⁸ in transit

⁸For a more comprehensive account of grade marking, see J.H. Jenkins, The Development of Grade Marking of Lumber in Canada, Department of Forestry, Publication No. 1134, September 1965; and for lumber-seasoning, including forced-air drying, see Kiln-Drying in Eastern Canada, Department of Forestry, Contribution No. P-72, 1964, Kiln-Drying in Western Canada, Department of Forestry, Contribution No. P-92, 1965, and D.R. Huffman and M.Y. Cech, Accelerated Air Drying of Spruce and Balsam Fir Lumber in New Brunswick, Canadian Forestry Service, Department of Fisheries and Forestry, Publication No. 1284 (1970).

before delivery to final markets. The secondary woodworking plants seasoned and planed most of the hardwood lumber, as usual, but some of the remainder was planed at the retail or wholesale level of distribution and by contractors having prefabrication facilities. An additional process, which has been adopted particularly for export markets, is the wrapping and strapping of unit quantities of lumber in preparation for mechanical materials-handling and containerized shipping. The trend towards having the planing-mill industry plane greater and greater proportions of lumber has been influenced by regulations requiring the use of grade-marked lumber in dwellings financed under the National Housing Act, effective April 2, 1962, and under regulations of the Federal Housing Administration in the United States, effective April 1960.

The general effect of raising the value of lumber at sawmills before shipping has been to create better integrated sawmill complexes that incorporate drying facilities, planing mills and packing departments. At many mills some sawing and planing processes have been automated and materials-handling has been improved to some degree. Despite these innovations more labor has been required in recent years as more wood-drying facilities, planers and packing units have been installed for the purpose of upgrading finished products.

Productivity has been increasing at a moderate pace during this transitional phase. In Canada as a whole it moved up at the rate of 3% a year from 1963 to 1968. Saw and planing mills in British Columbia were major contributors to this rise. There, output per man-hour paid rose at an average annual rate of 3.5% during the period. Periodic gains among mills in the Prairie Region and in Quebec (average rates of 10 and 4% per annum respectively) brought output per man-hour paid in those regions in 1968 well above the levels in 1963. Productivity in Ontario and the Atlantic Region turned up in 1968 after earlier declines, to raise output per man-hour paid to the 1963 level.

Pulp and Paper Mills

Between 1961 and 1969 output per man-hour worked by production workers in pulp and paper mills increased at an average annual rate of 1.4%, which compares with 4% for all employees in total manufacturing and 3.9% for all employees in nonagricultural producing industries in the corresponding period.⁹

SECTION 9. - TRENDS IN VALUES OF LOGS

(See Tables 36-37)

Available data on the value of logs delivered to mills are subject to qualifications¹⁰ but regional trends provide some indication of changes

⁹Data provided by courtesy of the Productivity Research and Analysis Section, Economic Accounts Branch, Dominion Bureau of Statistics.

¹⁰See explanatory notes to tables.

that have taken place between 1963 and 1968. Estimates of the value of deliveries of roundwood by the logging industry indicate that for Canada as a whole they moved up from \$26 per cunit in 1963 to \$32 per cunit in 1968. This advance represented an average annual increase of 4% for the period. Values of logs delivered to mills in British Columbia and Quebec moved up at an average annual rate of 5%; the values for the remaining regions increased at 4% a year over the 6-year period.

Pulp and Paper Mills

Estimates of values per cunit of pulpwood and wood residue used in pulp and paper mills show little change from 1961 to 1968. To a very large extent, the slow upward trend in values reflects the utilization of increasing proportions of wood residue, the landed cost of which is, on average, about two-thirds that of pulpwood. In 1968, the value per cunit of pulpwood and wood residue consumed in pulp and paper mills in Canada amounted to \$31, which was only marginally higher than the \$29 value of 1961. The average annual rate of increase in value was 2%. The highest values in 1968 were recorded in Ontario and Quebec at \$37 and \$36 per cunit respectively, followed by the Atlantic Region (\$31), the Prairie Region (\$26) and British Columbia (\$23) where wood residue from sawmills and veneer mills which would otherwise be a waste, forms a significant input of wood fiber for pulp and paper mills.

SECTION 10. - INVESTMENT IN FORESTRY AND FOREST-BASED INDUSTRIES

(See Table 38)

Investment in the logging industry followed a cyclical pattern from 1963 to 1970 that may be attributable in part to the acquisition of new equipment made available on the market and in part to the extension of logging operations to new areas. Illustrative of this movement, investment in new machinery and equipment rose from \$32 million in 1963 to \$53 million in 1965, then gradually contracted to \$40 million in 1968 before another round of heightened investment began which brought the outlay to \$54 million for 1969. Capital expenditures on the construction of new roads, bridges and buildings continued an upward trend for most of the period, moving from \$28 million in 1963 to a prospective expenditure of \$49 million in 1970. Investment in the repair of existing machinery and equipment, which may include the installation of advanced processing machines and ancillary parts, remained at a high level over the 8-year period, touching a peak of \$65 million in 1970, some 50% more than in 1968 and double the amount in 1963. Expenditures on repair to roads, bridges and buildings has remained stable at about \$16 million. Overall expenditures on both new and repair machinery and equipment and on construction increased at an average annual rate of 7% during the period 1963-1969.

Investment in the wood processing industries also increased slightly from 1963 to 1968, and indications are that an accelerated rate of capital expenditures was put in place in 1969 and is planned for 1970. The main impact of this capital expansion is being concentrated on machinery and equipment. Actual outlays for 1969 involved an investment of \$108 million

in new machinery and equipment in the woodworking industries, which is triple the amount expended in 1963. Prospects are for a slight decline from this high plateau in 1970. Concurrently, investment in new construction tripled between 1963 and 1969, stemming mainly from the upsurge of investment in woodworking plants in 1969 and 1970 from earlier years. Investment in repairs to machinery and equipment has been significant, showing a steady rise from \$37 million in 1963 to \$64 million in 1969. Altogether, investment in capital and repairs in woodworking industries doubled from \$94 in 1963 to \$224 million in 1969.

In paper and allied industries, investment in new machinery and equipment showed a strong upward thrust in 1969 and 1970, which estimates place at \$267 and \$373 million respectively. The prospective outlay for new machinery and equipment in 1970, if achieved, will be below the previous peak of \$413 million in 1966 when the last cycle of expansion in the industry reached its high point. Including expenditures on new construction, the total capital investment planned in this industry for 1970, was two and a half times as much as in 1963. Expenditures on repair to existing machinery and equipment have shown consistent year-to-year increases and, together with repair expenditures on construction projects, represented less than half the new capital investment of 1970.

Taken together, capital and repair expenditures in the wood products and pulp and paper industries in 1969 represented 21% of total outlays in the manufacturing industries.

SECTION 11. - MANPOWER TRENDS IN FORESTRY AND FOREST-BASED INDUSTRIES

(See Tables 39-43)

On a national basis, average hourly earnings of wage earners in wood industries rose at an annual average rate of 7% from 1962 to 1969. All of the five regions shared in this increase with only minor variations between regions.

Reflecting in part the scale of operations and the productivity of woods products industries in each of the regions, average hourly earnings moved upward in ascending order from east to west. The hourly average in the Atlantic Region amounted to \$1.66 in 1969 and increased to higher rates through each of the regions to British Columbia, where hourly earnings averaged \$3.42 in 1969.

In paper and allied industries average hourly earnings among wage earners reached \$3.28 in 1969, representing an average annual increase of 6% during the period 1962-1969. Regionally, rates of increase moved in a narrow band, Ontario and the Atlantic Region having average increases of 5% at the lower side of the scale and the Prairie Region, with an average annual increase of 7% achieving the highest annual average rate. Increases in Quebec and British Columbia, at 6% were the same as the national average.

Weekly Hours of Work

Sample data on the number of hours worked per week include overtime as well as hours put in by part-time and casual workers, and provide some indication of regional differences as well as short-term fluctuations created by demand conditions. In Canada as a whole weekly hours of work among wage earners in wood-products industries averaged 40.1 hours during each of the 3 years, 1966-1968, then decreased to 39.3 hours in 1969. In 1969 the average workweeks in British Columbia and the Prairie Region were 36.4 and 37.8 hours respectively. Ontario, Quebec and the Atlantic Region were above the national average with workweeks of 40.6, 45.2 and 42.9 hours respectively. In all regions the length of the workweek was less in 1969 than in previous years. For paper and allied industries in 1969 the length of the workweek averaged 41.1 hours, the same as in 1961, after having reached 41.8 hours in 1966.

Weekly Wages and Salaries

Reflecting the combined effect of changes in hourly earnings and weekly hours of work among wage earners, average weekly wages and salaries moved up consistently in the logging, wood products and paper and allied industries in the period 1962-1969 (Figure 4).

In logging all regions had year-to-year gains except the Atlantic Region, where weekly averages were lower in the years 1965-1967 than in the peak year of 1964 but by 1969 had recovered on a rising trend to well above the high of 1964. Nationally, average weekly wages and salaries in logging rose by an average annual rate of 7%. This rate of change was sustained in large part by annual increases of 10 and 9% in the Prairie Region and Quebec respectively, and in British Columbia where the rate of increase was 7% annually over the 8-year period from 1962 to 1969. Ontario and the Atlantic Region followed with annual rates of increase of 6 and 3% over the period. The logging systems in use in British Columbia, which require highly skilled personnel, and the high level of productivity of logging in that province, are reflected in the wage and salary scale, which averaged \$160 a week in

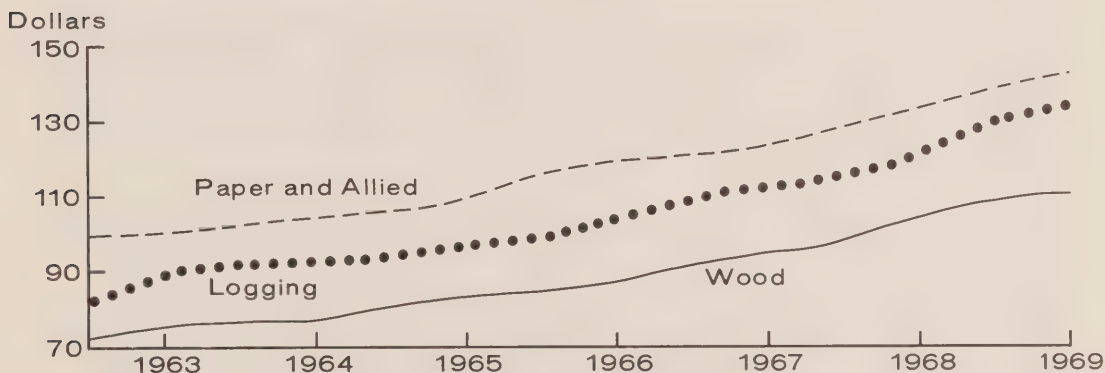


Figure 4. Average weekly wages and salaries in the logging, wood and paper and allied industries, Canada, 1963-1969.

1969. In Ontario and Quebec, wages and salaries amounted to \$140 and \$132 a week respectively and were followed by wage and salary payments in the Prairie and Atlantic Regions of \$115 and \$84 per week in 1969.

In the wood-products industries weekly wages and salaries increased by 6% a year in Canada as a whole from 1962 to 1969. All regions achieved annual increases of 6%. In general, average wages and salaries in the wood-products industry are lower than in logging and ranged from a high of \$131 a week in British Columbia to \$75 a week in the Atlantic Provinces.

Weekly wages and salaries in paper and allied industries averaged \$143 in Canada in 1969, after increasing 6% a year during the 8 years from 1962. Variations from the national average in 1969 ranged from \$167 a week in British Columbia to \$136 a week in Ontario.

Employment

Employment indexes in firms of 20 or more employees in the logging industry indicate that, with the exception of British Columbia, there was a lower level of employment in 1969 than in 1962. The index rose during the intervening years, then began to decline in various regions from 1965 onward and dropped quite sharply in 1968. In the meantime production of roundwood moved upward, and in 1968, the year in which employment indexes slackened off abruptly from the previous year, production of roundwood was 4% higher than in 1967. These trends appear to confirm what has been observed in earlier sections about increases in productivity per man-hour paid, which have been associated with the employment of more mechanical equipment in the woods (Figure 5).

Indexes of employment in the wood-products industry displayed a cyclical pattern in most regions during the period 1962-1969, the peaks centering on 1965, then tapering off in the next several years and turning up again in 1969. In the Atlantic Region, however, employment indexes were still lower in 1969 than in 1962. On a national basis the index of 1969 was 8% above the level of 1962.

The paper and allied industries showed consistent gains in employment in all regions during the 8-year period 1962-1969. The strongest expansion occurred in British Columbia, where the average annual rate of increase in employment in firms of 20 or more employees was 6%. The Atlantic, Quebec and Ontario Regions had average annual increases of 2%. The average for Canada as a whole was 3%.

Labor intensity as measured by salaries and wages paid as a percentage of value added by production indicates that in the logging industry the percentage moved down from 63 in 1963 to 56 in 1968. In the woods industries the percentage has been quite constant, moving from 61 in 1962 to 62 in 1967. The percentage then dropped to 55 in 1968, when substantial price increases in the industry supported a marked rise in value added. Labor intensity increased quite markedly in the paper and allied industries in recent years, advancing from 45% in 1964 to 56% in 1968.

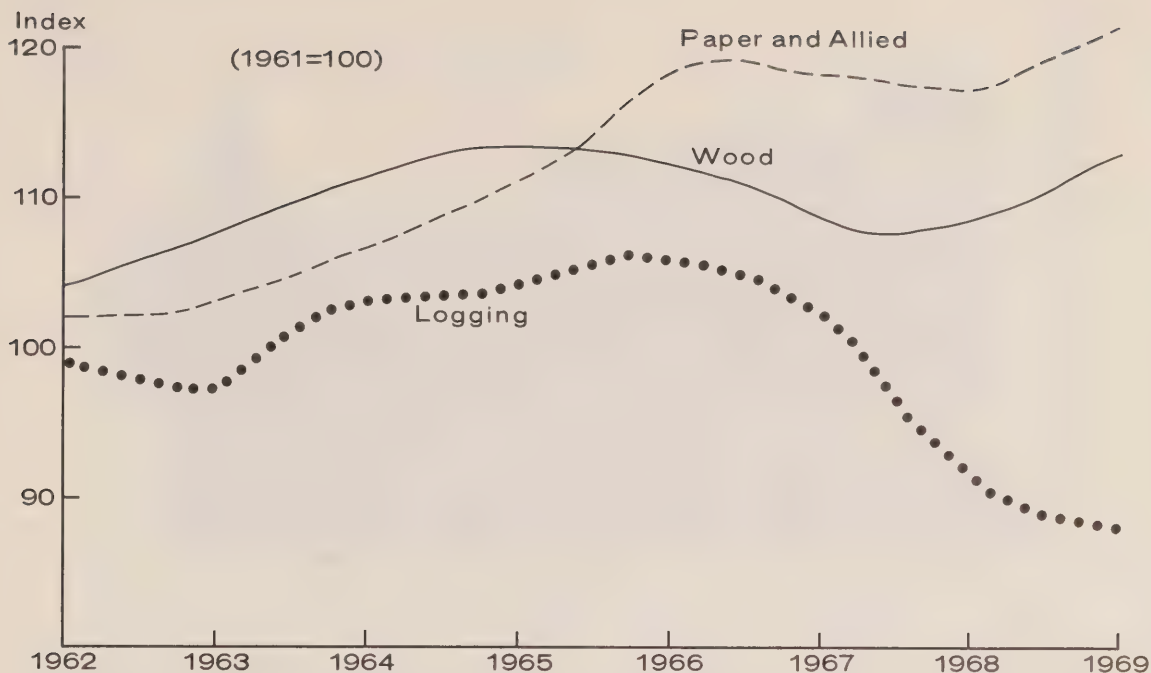


Figure 5. Indexes of employment in the logging, wood, and paper and allied industries, Canada, 1962-1969.

SECTION 12. - TRENDS IN PRICE INDEXES

(See Tables 44-50)

Wood Industries

Selling-price indexes of products of major wood industries such as sawmills, sash, door and planing mills, plywood and veneer mills and hard-wood flooring moved up at an average annual rate of between 4 and 5% during the period 1961-1969. The industry selling-price index for shingle mills, which is highly sensitive to the United States market, increased at an average annual rate of 11% mainly because of higher prices prevailing in 1968 and 1969. The index for wooden-box factories was stable up to 1966, as were most other selling-price indexes in the wood industries; then it moved ahead in more recent years to register an average annual increase of 3% for the period under review. In 1969 the composite index for wood industries stood at 145.9, representing an average increase since 1961 of 5% per annum (Figure 6).

Industry selling-price indexes of various species of softwood lumber in different geographic locations showed a considerable variation in rates of change in the period 1961-1969. Cedar and Douglas-fir lumbers on the coast of British Columbia led the advance with average annual increases of 9 and 6% respectively. Hemlock on the coast and Douglas-fir in the interior



Figure 6. Industry selling-price index of Douglas-fir plywood, Canada, 1963-1969.

of British Columbia rose at average rates of 5% a year. Industry selling-price indexes of spruce in the interior of British Columbia, and of white and jack and lodgepole pines and spruce in the region east of the Rockies moved up at the slower rate of approximately 3% per annum.

Industry selling-price indexes of hardwood lumbers were marked by relatively stable price patterns, and the prices of yellow birch and hard maple rose at average annual rates of about 2%. The demand for yellow birch and red oak flooring was somewhat stronger than that for lumber, and prices moved up at average rates of 4 and 5% a year respectively during the 9-year period.

In the case of western cedar poles used in transmission lines and distribution systems, average annual increases amounted to 4 and 3% respectively, and for cross arms used in transmission lines the average annual rate of increase was 6%.

Paper and Allied Industries

Selling-price indexes of paper and allied industries followed a slow upward trend from 1961 to 1969, except in the case of asphalt roofing manufactures, the selling-price index of which declined slightly. The prices of products manufactured by pulp and paper mills, and fabricators of paper-boxes and cartons and other paper converters moved upward within a narrow limit of annual increases that ranged from 1 to 2% on average. By 1969 the composite index of paper and allied industries stood at 113.8 (1961 = 100) representing an average annual increase of 2%.

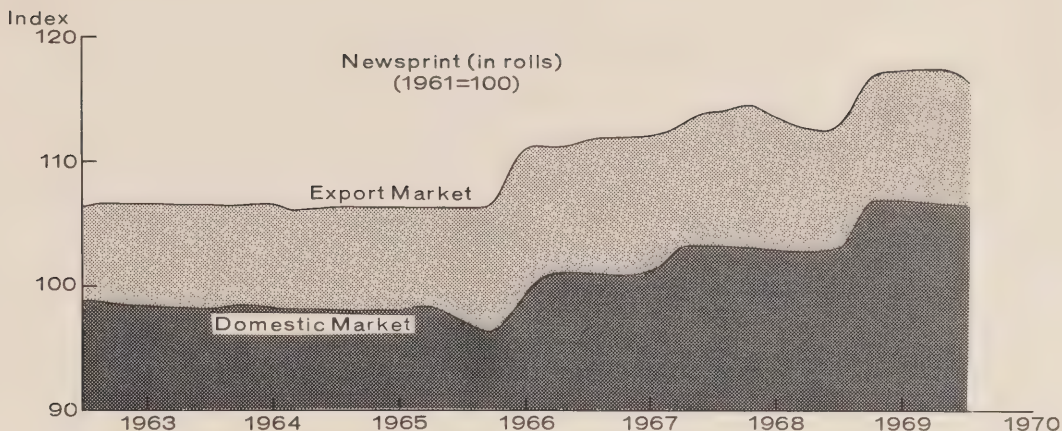


Figure 7. Industry selling-price indexes of newsprint, Canada, 1963-1969.

In the period 1961-1969 the selling-price indexes of selected products of the paper and allied industry moved up and down within a narrow range of values. Firmer prices in 1969 for bleached sulphite, unbleached sulphate wood pulp and newsprint brought the index for these three items to about 105 (1961 = 100) for an average annual increase of 1%. Export-market prices for these three items were stronger, and average annual increases amounted to 2%. Demand for fine paper was well sustained during the period, and the selling-price index rose at an average annual rate of 2%. The industry selling-price index of softboard building board declined to 89 in 1966 from 100 in 1961, then strengthened in subsequent years to reach the 1961 level in 1969 (Figure 7).

Residential Building Material Prices

Prices of a selection of residential-building materials based on wood, concrete and metal indicate that demand for lumber and lumber products in residential construction supported annual increases of 5% over the 9-year period 1961-1969. Price trends of wallboard and insulation board and concrete and metal products used in residential building moved up at an average of about 3% a year during the period. After undergoing a slight decline in the early part of the period, prices of roofing materials strengthened in 1968 and 1969 to a level that reflected average annual increases of 2%.

PART II.
TABULAR MATERIAL *

*Sources of tables shown in Part II together with explanatory notes are set out in Part III.

SECTION 1
THE TIMBER RESOURCE BASE

TABLE 1. ESTIMATES OF AREA OF FOREST LAND^a AND VOLUME
OF MERCHANTABLE TIMBER IN INVENTORIED FORESTS
ONLY, BY PROVINCE, CANADA, 1968

Province	Area (000's acres)			Volume ^b (000's cunits)			Average number of cunits per acre (cunits)
	Allocated ^c	Non allocated	Total	Allocated	Non allocated	Total	
Newfoundland Island	5,495	0	5,495	40,100	0	40,100	7
Prince Edward Island	525	0	525	1,500	0	1,500	3
Nova Scotia	9,656	0	9,656	85,840	0	85,840	9
New Brunswick	14,123	0	14,123	168,680	0	168,680	12
Quebec	72,049	81,916	153,965	893,110	410,860	1,303,970	8
Ontario	105,262	0	105,262	956,280	157,950	1,114,230	11
Manitoba	29,303	7,327	36,630	102,030	25,510	127,540	3
Saskatchewan	6,240	11,760	18,000	62,850	107,150	170,000	9
Alberta	34,489	5,727	40,216	536,620	59,150	595,770	15
British Columbia ^d	47,566	15,465	63,031	2,131,670	554,680	2,686,350	43
Canada	324,708	122,195	446,903	4,978,680	1,315,300	6,293,980	14

^aExcludes 17 million acres of "reserved forest land." The total nonreserved forest land area of Canada, including Labrador, Yukon and Northwest Territories is 779,312,000 acres.

^bNo global inventories are available for Labrador, Yukon or Northwest Territories.

^cAllocated land includes privately owned forest land, as well as forest land licensed, leased and/or under sustained-yield management and currently committed primarily to wood production.

^dData on volumes in British Columbia refer to trees of 7.1-inch dbh and over, in areas of mature timber stands only. Volumes from other provinces refer to trees of 4-inch dbh and over. All volumes are without bark and exclusive of tops and stumps.

TABLE 2. DISTRIBUTION OF MERCHANTABLE TIMBER BY
PROVINCE AND REGION, CANADA^a

Province and region	Percentage of Canada total			10" dbh + as a percent of total in province or region
	4" to 9" dbh	10" dbh and over	Combined	
Atlantic Region	10	3	6	32
Newfoundland	4	0.4	2	17
Labrador	2	0.2	1	16
Island	2	0.2	1	17
Prince Edward Island	b	b	b	11
Nova Scotia	2	0.8	1	38
New Brunswick	4	2	2	41
Quebec	12	16	14	71
Ontario	24	10	15	42
Prairie Region	20	7	12	38
Manitoba	3	0.6	2	23
Saskatchewan	6	1	3	24
Alberta	11	5	7	47
British Columbia	26	64	50	81
Yukon and NWT	8	0.4	3	9
Canada	100	100	100	64

^aBased on *National Forest Inventory*, 1963.

^bLess than 0.1%.

SECTION 2

LOGGING ACTIVITY

TABLE 3. ESTIMATES OF PRODUCTION OF ROUNDWOOD AND APPARENT DOMESTIC DISAPPEARANCE, CANADA, 1961-1968

Year	Production	Exports	Imports	Apparent domestic disappearance	
				Total	Per capita
	(thousands of cunits)				(cunits)
1961	31,753	1,272	497	30,978	1.7
1962	32,779	1,294	592	32,077	1.7
1963	35,230	1,224	598	34,604	1.8
1964	36,270	1,266	729	35,733	1.9
1965	36,607	1,353	871	36,125	1.8
1966	38,490	1,476	708	37,722	1.9
1967	37,984	1,433	814	37,365	1.8
1968	39,726	1,328	861	39,259	1.9

TABLE 4. ESTIMATES OF PRODUCTION OF ROUNDWOOD,
BY PROVINCE AND REGION, CANADA, 1961-1968

(thousands of cunits)

Province and region	1961	1962	1963	1964	1965	1966	1967	1968
Atlantic Region	3,982	3,026	3,799	4,030	4,076	4,279	4,030	4,554
Newfoundland	980	746	890	968	988	1,004	864	834
Prince Edward Island	102	55	60	61	67	67	59	57
Nova Scotia	967	819	866	1,046	1,068	1,082	1,069	1,282
New Brunswick	1,933	1,406	1,983	1,955	1,953	2,126	2,038	2,381
Quebec	9,141	8,760	9,135	9,331	9,357	9,940	9,997	9,854
Ontario	4,940	5,194	5,351	5,698	5,671	6,009	6,071	5,909
Prairie Region	2,000	2,327	2,171	2,032	2,145	2,201	2,115	2,346
Manitoba	376	532	415	394	425	434	359	392
Saskatchewan	440	478	421	393	454	464	644	646
Alberta	1,184	1,317	1,335	1,245	1,266	1,303	1,112	1,308
British Columbia	11,671	13,429	14,734	15,146	15,331	16,024	15,726	17,025
Yukon and NWT	18	41	40	33	27	37	45	39
Canada ^a	31,753	32,779	35,230	36,270	36,607	38,490	37,984	39,726

^aData may not add to totals because of rounding.

TABLE 5. UTILIZATION OF INDUSTRIAL ROUNDWOOD IN MAJOR
CONSUMING INDUSTRIES, CANADA, 1961-1968
(*thousands of units*)

Year	Utilization						Total utilization, ^d industrial roundwood
	Pulp and paper mills ^a	Woodworking plants				Exports less ^b imports	Other ^c
		Sawmill, planing and millwork plants	Plywood and veneer mills	Shingle mills	Other woodworking plants		
1961	12,271	11,760	1,086	275	158	775	3,021
1962	12,665	14,989	1,185	300	158	702	515
1963	12,735	16,445	1,309	352	170	626	1,464
1964	13,725	17,409	1,416	318	200	537	676
1965	14,014	17,688	1,449	323	233	482	574
1966	15,090	17,528	1,597	326	288	768	1,149
1967	14,908	17,382	1,576	326	290	619	1,176
1968	15,616	18,381	1,674	449	307	467	1,159
							29,346
							30,514
							33,101
							34,281
							34,763
							36,746
							36,277
							38,053

^aFor quantities of wood residue used in pulp and paper mills, see Table 7.

^bImports of roundwood are included in quantities utilized in plants. For total imports and exports, see Table 3.

^cIncludes roundwood processed into railway cross-ties, poles for utility transmission and distribution lines, round mining timber (pit props) and fence rails and posts.

^dQuantities on total utilization correspond to total production of industrial roundwood, as data on year-end inventories are not available.

TABLE 6. UTILIZATION OF HIGH-DENSITY HARDWOOD ROUNDWOOD^a
IN MAJOR CONSUMING INDUSTRIES, CANADA, 1961-1968
(thousands of cunits)

Year	Utilization					Exports	Imports	Estimates of domestic production ^c (industrial use)
	Pulp and paper mills	Woodworking plants						
		Sawmill and millwork	Plywood and veneer	Other woodworking	Subtotal			
1961	347	463	156	88	707	12	b	b
1962	420	796	193	127	1,116	14	b	b
1963	484	867	212	133	1,212	16	b	b
1964	549	999	216	154	1,369	18	b	b
1965	550	1,001	223	184	1,408	16	b	b
1966	549	1,164	208	211	1,583	17	127	2,022
1967	563	1,117	192	189	1,498	19	173	1,907
1968	585	1,127	180	214	1,521	22	144	1,984

^aExcludes poplar and related species.

^bData not available for years prior to 1966. Quantities of imports included in data on utilization.

^cIn addition, relatively small quantities are processed into railway cross-ties, poles and pilings, round mining timber (pit props) and fence rails and posts. Quantities of hardwood roundwood (including poplar) used for fuelwood and for charcoal were estimated at 1,099 thousand cunits in 1968.

SECTION 3
PULP AND PAPER MILL OPERATIONS

TABLE 7. UTILIZATION OF PULPWOOD AND WOOD RESIDUE^a
IN PULP AND PAPER MILLS, EXPORTS, IMPORTS
AND APPARENT PRODUCTION, CANADA, 1961-1969

(thousands of cunits)

Year	Quantities used in pulp and paper mills			Exports		Imports	Apparent production	
	Pulpwood	Wood residue	Total	Pulpwood	Wood residue	Pulpwood	Pulpwood	Wood residue
1961	12,271	1,787	14,058	978	342	176	13,073	2,129
1962	12,665	2,095	14,760	1,041	419	128	13,578	2,514
1963	12,735	2,505	15,240	947	540	111	13,571	3,045
1964	13,725	2,975	16,700	1,050	463	97	14,678	3,438
1965	14,014	3,657	17,671	1,149	376	90	15,073	4,033
1966	15,090	4,422	19,512	1,165	460	104	16,151	4,882
1967	14,908	4,989	19,897	984	543	129	15,763	5,532
1968	15,616	5,875	21,491	900	537	98	16,418	6,412
1969	17,320 ^b	6,486 ^b	23,806 ^b	890	352	93	18,117 ^b	6,838 ^b

^aIncludes wood chips recovered from slabs and cull logs in sawmills, and cores from peeler logs at the lathe and clean round up (fish tails) and clippings from green veneer.

^bPreliminary.

TABLE 8. UTILIZATION OF PULPWOOD IN PULP
AND PAPER MILLS, BY SPECIES,
CANADA, 1961-1968

(thousands of cunits)

Year	Softwoods					Broad-leaved			Total, all species
	Spruce and balsam	Hemlock	Jack pine	Other	Total	Poplar	Other	Total	
1961									
Quantity	9,154	1,226	963	176	11,518	406	347	753	12,271
Percent	75	10	8	1	94	3	3	6	100
1962									
Quantity	9,351	1,302	893	249	11,795	451	420	870	12,665
Percent	74	10	7	2	93	4	3	7	100
1963									
Quantity	9,347	1,273	966	218	11,805	446	484	930	12,735
Percent	72	10	8	2	92	4	4	8	100
1964									
Quantity	10,074	1,393	1,056	214	12,737	439	549	988	13,725
Percent	73	10	8	2	93	3	4	7	100
1965									
Quantity	10,338	1,317	1,079	348	13,082	382	550	932	14,014
Percent	74	10	8	2	93	3	4	7	100
1966									
Quantity	11,147	1,426	1,215	375	14,163	378	549	927	15,090
Percent	74	10	8	2	93	3	4	7	100
1967									
Quantity	10,719	1,669	1,257	343	13,988	357	563	920	14,908
Percent	72	11	8	2	93	3	4	7	100
1968									
Quantity	10,926	1,885	1,451	336	14,598	433	585	1,018	15,616
Percent	70	12	9	2	93	3	4	7	100

TABLE 9. PRODUCTION, EXPORTS, IMPORTS AND DOMESTIC DISAPPEARANCE
OF WOOD PULP IN PULP AND PAPER MILLS, CANADA, 1961-1969

Year	Production	Exports	Imports	Domestic disappearance	
				Total	Per capita
	(thousands of tons)				(lb.)
1961	11,779	2,868	61	8,874	973
1962	12,133	3,044	63	9,003	968
1963	12,474	3,340	74	9,120	963
1964	13,742	3,636	75	10,045	1,041
1965	14,573	3,852	94	10,679	1,087
1966	15,958	4,096	58	11,699	1,169
1967	15,857	4,269	36	11,413	1,119
1968	16,762	4,971	46	11,635	1,121
1969 ^a	18,550	5,795	39	12,854	1,222

^aData on production and disappearance are preliminary.

TABLE 10. PRODUCTION AND CONSUMPTION OF KINDS OF
WOOD PULPS IN PULP AND PAPER MILLS,
CANADA, 1961-1969

(thousands of tons)

Year	Chemical					Mechanical	Total, all wood pulp
	Sulphate (kraft)	Sulphite	Dissolving and special alpha	Semichemical and other	Total	Groundwood and other ^a	
1961							
Production	2,697	2,414	373	258	5,742	6,037	11,779
Consumption	1,031	1,826	6	227	3,100	5,774	8,874
1962							
Production	2,926	2,406	478	264	6,074	6,059	12,133
Consumption	1,203	1,784	2	229	3,218	5,786	9,004
1963							
Production	3,136	2,566	429	299	6,430	6,044	12,474
Consumption	1,310	1,790	8	247	3,355	5,765	9,120
1964							
Production	3,420	2,872	450	339	7,081	6,661	13,742
Consumption	1,400	2,000	9	286	3,695	6,350	10,045
1965							
Production	3,904	2,924	475	240	7,543	7,030	14,573
Consumption	1,644	2,073	5	236	3,958	6,721	10,679
1966							
Production	4,605	3,066	429	276	8,376	7,582	15,958
Consumption	1,906	2,229	3	287	4,425	7,274	11,699
1967							
Production	5,068	2,827	434	251	8,580	7,277	15,857
Consumption	2,096	2,092	3	245	4,436	6,977	11,413
1968							
Production	6,034	2,643	469	280	9,426	7,336	16,762
Consumption	2,180	2,025	3	307	4,515	7,120	11,635
1969 ^b							
Production	6,923	2,794	498	314	10,529	8,021	18,550
Consumption	2,535	2,224	3	329	5,091	7,763	12,854

^aIncludes defibrated or exploded wood pulp and groundwood screenings.

^bPreliminary.

SECTION 4
MARKET TRENDS IN PULP AND PAPER PRODUCTS

TABLE 11. EXPORTS AND IMPORTS OF KINDS OF
WOOD PULPS, CANADA, 1961-1969

(thousands of tons)

Year	Chemical					Mechanical	Total, all wood pulp
	Sulphate	Sulphite	Dissolving and special alpha	Semichemical and other	Total	Groundwood and other ^a	
1961							
Exports	1,634	634	307	53	2,628	239	2,867
Imports	13	48	0	0	61	0	61
1962							
Exports	1,681	705	355	40	2,781	263	3,044
Imports	10	53	0	0	63	0	63
1963							
Exports	1,883	786	372	46	3,087	252	3,339
Imports	13	61	0	0	74	0	74
1964							
Exports	2,018	885	402	41	3,346	290	3,636
Imports	11	40	22	2	75	0	75
1965							
Exports	2,246	891	385	14	3,536	317	3,853
Imports	24	39	28	3	94	0	94
1966							
Exports	2,615	852	364	1	3,832	264	4,096
Imports	16	25	16	1	58	0	58
1967							
Exports	2,966	724	351	6	4,047	222	4,269
Imports	13	6	16	1	36	0	36
1968							
Exports	3,742	636	368	5	4,751	220	4,971
Imports	17	10	18	1	46	0	46
1969							
Exports	4,503	653	376	8	5,540	255	5,795
Imports	15	6	17	1	39	0	39

^aIncludes screenings.

TABLE 12. EXPORTS OF WOOD PULP TO WORLD MARKETS,
CANADA, 1961-1969

(thousands of tons)

World markets	1961	1962	1963	1964	1965	1966	1967	1968	1969
North America									
United States	2,175	2,399	2,505	2,677	2,817	2,978	2,902	3,226	3,830
Europe									
United Kingdom	278	252	280	339	347	324	273	317	296
E.E.C. ^a	113	142	187	243	269	330	525	741	829
Rest of western Europe	8	6	20	27	21	14	30	54	84
Total Europe	399	400	487	609	637	668	828	1,112	1,209
Asia									
Japan	21	53	167	180	204	261	317	410	499
Rest of Asia	83	76	55	44	31	51	49	43	54
Total Asia	104	129	222	224	235	312	366	453	553
Australia and New Zealand	25	24	40	39	68	45	64	63	82
Central and South America	152	91	81	82	85	81	91	101	96
Africa	12	3	4	6	11	13	18	17	25
Total exports	2,867	3,044	3,339	3,636	3,853	4,096	4,269	4,971	5,795

^aComprises France, West Germany, Italy, Netherlands, Belgium and Luxembourg.

TABLE 13. SHIPMENTS, EXPORTS AND APPARENT
DOMESTIC CONSUMPTION OF NEWSPRINT,
CANADA, 1961-1969

Year	Shipments	Exports	Apparent domestic consumption	
			Total	Per capita
	(thousands of tons)			(lb.)
1961	6,675	6,254	421	46
1962	6,648	6,149	499	54
1963	6,639	6,212	427	53
1964	7,377	6,815	562	58
1965	7,841	7,190	651	67
1966	8,493	7,821	672	67
1967	8,108	7,464	644	63
1968	8,205	7,479	726	70
1969	8,942 ^a	8,234	708 ^a	67 ^a

^aPreliminary.

TABLE 14. SHIPMENTS OF NEWSPRINT TO DOMESTIC AND
WORLD MARKETS, CANADA, 1961-1969

(thousands of tons)

World markets	1961	1962	1963	1964	1965	1966	1967	1968	1969
North America									
Canada	421	499	427	562	651	672	644	726	708 ^a
United States	5,228	5,227	5,251	5,676	6,113	6,652	6,341	6,138	6,525
Total	5,649	5,726	5,678	6,238	6,764	7,324	6,985	6,864	7,233
Europe									
United Kingdom	457	482	459	480	370	384	336	438	487
E.E.C. ^b	21	6	16	13	51	72	77	68	82
Rest of western Europe	16	15	22	26	20	23	18	15	30
Total Europe	494	503	497	519	441	479	431	521	599
Asia									
Japan	0	0	0	73	13	19	41	111	116
Rest of Asia	30	41	68	76	94	118	128	126	208
Total	30	41	68	149	107	137	169	237	374
Oceania ^c	154	113	95	146	143	142	160	177	161
South America	171	132	139	148	190	240	200	252	331
Central America	117	88	116	107	131	147	152	136	197
Africa ^d	60	45	46	69	65	24	11	18	47
Total shipments	6,675	6,648	6,639	7,377	7,841	8,493	8,108	8,205	8,942 ^a

^aPreliminary.

^bComprises France, West Germany, Italy, Netherlands, Belgium and Luxembourg.

^cMainly exports to Australia.

^dIncludes shipments to Middle East.

TABLE 15. SHIPMENTS, EXPORTS, IMPORTS AND APPARENT
DOMESTIC CONSUMPTION OF FINE, BOOK AND
WRITING PAPERS, CANADA, 1961-1969

Year	Shipments	Exports	Imports	Apparent domestic consumption	
				Total	Per capita
	(thousands of tons)				(lb.)
1961	417	64	22	375	41
1962	434	70	22	386	42
1963	460	78	23	405	43
1964	491	108	21	404	42
1965	535	130	23	428	44
1966	621	171	25	475	47
1967	627	182	25	470	46
1968	663	162	32	533	51
1969 ^a	742	244	46	544	52

^aData on shipments and consumption are preliminary.

TABLE 16. SHIPMENTS, EXPORTS, IMPORTS AND APPARENT
DOMESTIC CONSUMPTION OF TISSUE AND
SANITARY PAPER, CANADA, 1961-1969

Year	Shipments ^a	Exports	Imports	Apparent domestic consumption	
				Total	Per capita
	(thousands of tons)				(lb.)
1961	139	7	9	141	15
1962	156	13	8	151	16
1963	179	12	7	174	18
1964	173	15	7	165	17
1965	174	12	9	171	17
1966	187	14	7	180	18
1967	194	19	6	181	18
1968	204	18	10	196	19
1969 ^b	210	16	9	203	19

^aIncludes converted paper products processed and shipped by paper mills.

^bData on shipments and consumption are preliminary.

TABLE 17. SHIPMENTS, EXPORTS, IMPORTS AND APPARENT
DOMESTIC CONSUMPTION OF WRAPPING PAPER,
CANADA, 1961-1969

Year	Shipments	Exports	Imports	Apparent domestic consumption	
				Total	Per capita
	(thousands of tons)				(lb.)
1961	309	43	5	271	30
1962	323	36	3	290	31
1963	334	31	4	307	32
1964	342	32	12	322	33
1965	360	29	7	338	34
1966	413	47	5	371	37
1967	459	100	6	365	36
1968	459	111	17	365	35
1969 ^a	493	99	16	410	39

^aData on shipments and consumption are preliminary.

TABLE 18. SHIPMENTS, EXPORTS, IMPORTS AND APPARENT
DOMESTIC CONSUMPTION OF PAPERBOARDS,
CANADA, 1961-1969

Year	Shipments	Exports	Imports	Apparent domestic consumption	
				Total	Per capita
	(thousands of tons)				(lb.)
1961	1,017	105	108	1,020	112
1962	1,092	129	98	1,061	114
1963	1,214	169	91	1,136	120
1964	1,297	178	84	1,203	125
1965	1,421	186	90	1,325	135
1966	1,533	254	84	1,363	136
1967	1,587	244	91	1,434	140
1968	1,645	253	94	1,486	145
1969 ^a	1,745	286	105	1,564	149

^aData on shipments and consumption are preliminary.

TABLE 19. SHIPMENTS, EXPORTS, IMPORTS AND APPARENT
DOMESTIC CONSUMPTION OF BUILDING BOARDS
AND PAPER, CANADA, 1961-1968

Year	Shipments ^a	Exports	Imports	Apparent domestic consumption	
				Total	Per capita
	(thousands of tons)				(lb.)
1961	274	27	37	284	31
1962	304	29	33	308	33
1963	372	40	28	360	38
1964	392	55	28	365	38
1965	367	73	30	324	33
1966	363	58	32	337	34
1967	382	63	31	350	34
1968	420	92	36	364	35

^aShipments of building board are estimated for 1961, 1962, 1966 and 1968.
Relatively small quantities of industrial papers are included in shipments.

SECTION 5

MARKET TRENDS IN LUMBER AND ALLIED PRODUCTS

TABLE 20. PRODUCTION, EXPORTS, IMPORTS AND APPARENT DOMESTIC CONSUMPTION OF SOFTWOOD LUMBER, CANADA, 1961-1969

Year	Production	Exports			Imports			Apparent domestic consumption	
		USA	Other	Total	USA	Other	Total	Total	Per capita
	(millions of board feet)								(bd.ft.)
1961	7,807	3,680	1,143	4,823	144	.3	144	3,128	171
1962	8,410	4,180	1,135	5,315	128	.1	128	3,170	170
1963	9,410	4,628	1,467	6,095	123	.1	123	3,536	186
1964	9,829	4,627	1,697	6,324	159	.1	159	3,445	178
1965									
B.C.	7,446	3,995	1,461	5,446	29	0	29	b	
East of Rockies	2,844	580	282	862	133	0	133	b	
Total	10,290	4,575	1,743	6,318	162	0	162	4,065	206
1966									
B.C.	7,314	3,812	1,293	5,105	23	0	23	b	
East of Rockies	2,712	577	233	810	128	0	128	b	
Total	10,026	4,389	1,526	5,915	151	0	151	4,055	203
1967									
B.C.	7,103	3,928	1,652	5,580	22	0	22	b	
East of Rockies	2,636	599	142	741	154	0	154	b	
Total	9,739	4,527	1,794	6,321	176	0	176	3,869	190
1968									
B.C.	7,807	4,467	1,546	6,013	41	0	41	b	
East of Rockies	2,955	957	71	1,028	157	0	157	b	
Total	10,762	5,424	1,617	7,041	198	0	198	3,888	187
1969 ^a									
B.C.	7,700	4,419	1,156	5,575	35	0	35	b	
East of Rockies	3,295	1,068	63	1,131	139	0	139	b	
Total	10,995	5,487	1,219	6,706	174	0	174	3,943	187

^a Data on production and consumption are preliminary estimates. Lumber production in Yukon and Northwest Territories included with total for east of the Rockies. In 1970, mills representing 72% of total production in Interior Region of British Columbia, reported seasoning of softwood lumber as follows: kiln dried, 55%; air dried, 18%; and unseasoned, 27%. Mills representing 90% of total production in the Coastal Region of the province reported seasoning of softwood lumber as follows: kiln dried, 9%; air dried, 2%; and unseasoned, mainly for export by water-borne transport, 89%.

^b Not available.

TABLE 21. PRODUCTION, EXPORTS, IMPORTS AND APPARENT DOMESTIC CONSUMPTION OF HARDWOOD LUMBER^a, CANADA, 1961-1968

Year and species	Production	Exports			Imports			Apparent domestic consumption	
		USA	Other	Total	USA	Other	Total	Total	Per capita
	(millions of board feet)							(bd.ft.)	
1961									
Birch and maple	323	81	10	91	b	b	b	b	b
Other	107	13	2	15	b	b	b	b	b
Total	430	94	12	106	77	13	90	398	22
1962									
Birch and maple	312	107	11	118	b	b	b	b	b
Other	107	17	2	19	b	b	b	b	b
Total	419	124	13	137	74	15	89	379	20
1963									
Birch and maple	343	106	9	115	b	b	b	b	b
Other	125	17	2	19	b	b	b	b	b
Total	468	123	11	134	80	13	93	430	23
1964									
Birch and maple	387	107	12	119	b	b	b	b	b
Other	139	19	3	22	b	b	b	b	b
Total	526	126	15	141	94	19	113	503	26
1965									
Birch and maple	380	127	11	138	b	b	b	b	b
Other	145	26	2	28	b	b	b	b	b
Total	525	153	13	166	91	28	119	474	24
1966									
Birch and maple	389	170	9	179	b	b	b	b	b
Other	184	34	3	37	b	b	b	b	b
Total	573	204	12	216	91	20	111	483	24
1967									
Birch and maple	432	125	8	133	b	b	b	b	b
Other	158	30	2	32	b	b	b	b	b
Total	590	155	10	165	90	23	113	518	25
1968									
Birch and maple	432	112	8	120	b	b	b	b	b
Other	157	34	3	37	b	b	b	b	b
Total	589	145	11	157	74	34	108	540	25

^aIncludes dimension sawn stock and excludes hardwood flooring and spoolwood. Data on production of individual species of hardwood lumber are estimated.

^bNot available.

TABLE 22. SHIPMENTS OF SELECTED WOOD-BASED
BUILDING MATERIALS, CANADA, 1961-1968

Year	Hardwood		Shingles and shakes (MM squares)
	Flooring (MM bd.ft.)	Floor tiles (MM sq.ft.)	
1961	63.1	a	2.3
1962	64.3	7.2	2.5
1963	63.7	10.5	2.9
1964	75.6	14.9	2.7
1965	81.1	14.4	2.6
1966	74.6	23.1	2.6
1967	71.7	18.6	2.6
1968	64.7	19.8	3.0

^aNot available.

SECTION 6

MARKET TRENDS IN PLYWOODS AND VENEERS

TABLE 23. PRODUCTION, EXPORTS, IMPORTS AND APPARENT
DOMESTIC CONSUMPTION OF CONSTRUCTION-GRADE
PLYWOOD, CANADA, 1961-1969

Year	Production			Exports	Imports	Apparent domestic consumption	
	Softwood	Poplar	Total			Total	Per capita
	(millions of square feet - 3/8" basis, unsanded)					(sq.ft.)	
1961	1,192	125	1,317	136	a	1,187	65
1962	1,306	122	1,428	203	a	1,222	66
1963	1,428	138	1,566	210	a	1,335	70
1964	1,626	159	1,785	342	3	1,444	75
1965	1,674	147	1,821	334	1	1,449	74
1966	1,766	164	1,930	382	2	1,522	76
1967	1,848	177	2,025	482	4	1,529	75
1968	1,973	134	2,107	518	4	1,652	80
1969 ^b	2,020	144	2,164	483	77	1,721	82

^a Not available.^b Data on production and domestic consumption are preliminary.

TABLE 24. PRODUCTION, EXPORTS, IMPORTS AND DOMESTIC
DISAPPEARANCE OF VENEERS FOR CONSTRUCTION-GRADE
PLYWOOD, CANADA, 1961-1969

(all thicknesses - millions of square feet)

Year	Veneer Production			Exports	Imports	Apparent domestic disappearance
	Softwood	Poplar	Total			
1961	46	6	52	43	a	a
1962	140	14	154	42	a	a
1963	269	7	276	63	a	a
1964	217	8	225	28	a	a
1965	478	3	481	82	a	a
1966	776	a	776	193	a	a
1967	789	a	789	194	a	a
1968	779	a	779	146	a	a
1969 ^b	649	a	649	169	167	646

^aNot available.

^bData on production and domestic disappearance are preliminary.

TABLE 25. PRODUCTION, EXPORTS, IMPORTS AND APPARENT DOMESTIC CONSUMPTION OF HARDWOOD PLYWOOD^a, CANADA, 1961-1969

Year	Production	Exports	Imports	Apparent domestic consumption	
				Total	Per capita
	<i>(millions of square feet - 1/4", sanded both sides)</i>				<i>(sq.ft.)</i>
1961	114	25	b	b	b
1962	147	37	110	215	12
1963	167	49	94	213	11
1964	177	48	145	272	14
1965	178	47	130	258	13
1966	189	50	151	282	14
1967	157	38	200	320	16
1968	181	37	204	366	18
1969 ^c	174	35	262	387	18

^aExcluding poplar plywood and a small quantity of hardwood plywood produced by the furniture industry.

^bNot available.

^cData on production and domestic consumption are preliminary.

TABLE 26. PRODUCTION, EXPORTS, IMPORTS AND APPARENT DOMESTIC
DISAPPEARANCE OF HARDWOOD VENEERS^a, CANADA, 1961-1969

(all thicknesses - millions of square feet)

Year	Production	Exports	Imports	Apparent domestic disappearance
1961	688	526	b	b
1962	900	653	b	b
1963	1,064	719	b	b
1964	1,183	831	197	515
1965	1,218	897	178	497
1966	1,223	837	190	547
1967	1,085	826	215	416
1968	1,183	905	172	452
1969 ^c	1,081	769	245	526

^aExcluded are poplar veneers.

^bNot available.

^cData on production and domestic disappearance are preliminary.

SECTION 7

MARKET TRENDS IN MILLWORK, BUILDING BOARDS AND PACKAGING PRODUCTS

TABLE 27. SHIPMENTS OF SELECTED WOOD COMPONENTS OF BUILDINGS
AND OF PREFABRICATED BUILDINGS, CANADA, 1961-1968*(millions of current dollars)*

Year	Window sashes or window units	Window or door frames	Kitchen cabinets or units	Table, bar or counter tops	Wooden moldings	Flush type doors	Roof trusses, rafters, beams		Prefabricated	
							Laminated	Non laminated	Stairs	Wooden buildings
1961	35	8	12	4	13	29	11	a	a	27
1962	37	9	15	4	14	31	11	a	a	25
1963	40	7	16	5	17	28	8	1	a	28
1964	36	8	20	5	21	36	8	2	0.4	35
1965	39	8	25	6	20	40	11	2	0.5	38
1966	39	8	28	6	21	42	15	3	0.8	75
1967	41	8	30	7	27	46	13	4	1.0	97
1968	41	9	38	8	27	49	12	4	1.0	99

^aNot available.

TABLE 28. SHIPMENTS OF SOFTBOARD BUILDING BOARDS,
CANADA, 1961-1969

(millions of square feet - 1/2" basis)

Year	Building board panels	Asphalted sheathing board	Decorative board	Miscellaneous softboards	Roof insulation boards	Acoustic tiles	
						Wood fiber	Mineral and mineral-treated
1961	56	96	b	80 ^a	149	49	b
1962	56	97	52	34	182	45	b
1963	59	101	42	19	185	40	b
1964	62	114	50	24	198	41	b
1965	58	113	70	29	211	41	19
1966	54	117	72	27	209	35	29
1967	54	119	86	29	174	36	32
1968	60	134	94	53	176	36	36
1969 ^c	55	138	80	31	197	22	44

^aIncludes decorative board.

^bNot available.

^cPreliminary. Data for 1969 exclude export shipments which, as reported by mills, totalled 59 million square feet for all types of softboard building boards (wood fiber). Softboard building boards as shown above are also referred to as 'rigid insulating board (wood fiber)'. These are homogeneous or laminated, with densities from approximately 12 to 25 pounds per cubic foot.

TABLE 29. PRODUCTION, EXPORTS, IMPORTS AND APPARENT
DOMESTIC CONSUMPTION OF HARDBOARD^a,
CANADA, 1952-1969

Year	Production	Exports	Imports	Apparent domestic consumption	
				Total	Per capita
	<i>(millions of square feet - 1/8" basis)</i>				<i>(sq.ft.)</i>
1952	149	38	b	b	b
1953	157	39	b	b	b
1954	151	40	b	b	b
1955	215	88	b	b	b
1956	240	74	b	b	b
1957	239	84	b	b	b
1958	248	42	b	b	b
1959	266	59	b	b	b
1960	268	34	b	b	b
1961	292	36	30	282	15
1962	335	40	36	321	17
1963	354	56	34	331	17
1964	412	74	33	355	18
1965	463	143	40	333	17
1966	413	84	40	339	17
1967	447	93	44	376	18
1968	572	160	53	437	21
1969	628	171	63	471	22

^aIncludes three classes of hardboard, namely,
(i) not tempered or treated,
(ii) oil treated and
(iii) prefinished wall and ceiling panels.
These boards are within the density range of 45 to 75 pounds
per cubic foot.

^bNot available.

TABLE 30. SHIPMENTS, EXPORTS, IMPORTS AND APPARENT
DOMESTIC CONSUMPTION OF PARTICLEBOARD,
CANADA, 1957-1969

Year	Shipments	Exports	Imports	Apparent domestic consumption	
				Total	Per capita
	(millions of square feet - 5/8" basis)				(sq.ft.)
1957	12	a	a	a	a
1958	17	a	a	a	a
1959-1961	a	a	a	a	a
1962	47	a	a	a	a
1963	59	a	a	a	a
1964	76	2	4	78	4
1965	100	5	3	98	5
1966	118	1	4	121	6
1967	115	0.2	10	124	6
1968	141	0.3	14	155	7
1969 ^b	165	0.2	32	197	9

^aNot available.

^bPreliminary.

TABLE 31. DISTRIBUTION OF SHIPMENTS OF MANUFACTURING PLANTS IN WOOD AND IN PAPER AND ALLIED INDUSTRIES, BY TYPE OF BUYER, CANADA, 1961

Industry	Total Value of shipments (\$ millions)	Percentage distribution						
		Wholesalers	Retailers	Other manufacturers	Other industry and business users	Buyers in other countries	Brokers, industries, governments	Branches of manufacturers' plants
Wood industries	1,080	23	8	7	10	27	12	13
Sawmilling	532	24	5	6	3	38	12	12
Sash, door and planing	268	17	14	3	26	12	21	7
Veneer and plywood mills	159	34	5	8	2	17	2	32
Shingle mills	17	7	1	8	0	77	6	1
Hardwood-flooring	14	21	17	1	34	14	2	11
Wooden box	21	21	5	57	10	1	2	4
Coffin and casket	13	1	0	0	99	0	0	0
Miscellaneous wood industries								
Wood handles	9	19	18	42	3	10	2	6
Woodenware	4	36	38	11	5	6	2	2
Cooperage	7	23	10	53	0	0	14	0
Miscellaneous	36	20	4	12	37	17	9	1
Paper and allied industries	2,251 ^a	11	3	21	4	33	6	22
Pulp and paper	1,637	6	1	11	3	45	5	29
Asphalt roofing	62	48	21	13	9	1	1	7
Paper box and bag								
Folding and set-up box	118	16	7	71	2	0	2	2
Corrugated box	149	13	1	75	5		2	4
Paper bag	85	21	5	54	11		2	7
Other paper converters	193	39	16	25	11	1	4	4

^aTotal sales exceed the sum of individual industry sales, as the total includes sales to other subindustries.

TABLE 32. ESTIMATES OF CONSUMPTION OF PAPER AND WOOD PACKING CONTAINERS
AND SUPPLIES AND OF ALL PACKING SUPPLIES IN MANUFACTURING
INDUSTRIES, CANADA, 1962

Principal industries	Folding and corrugated boxes and cartons	Paper bags, labels, wrappers (\$ millions)	Wooden boxes, crates, barrels, pallets	Paper and wood packing supplies		All packing supplies	
				Total value (\$ millions)	Value per \$1,000 of shipments	Total value (\$ millions)	Value per \$1,000 of shipments
Nondurable-goods							
Food and beverages	104.6	62.1	7.8	174.4	32	393.1	73
Tobacco products	1.6	7.1	1.1	9.7	28	28.7	82
Chemical products	21.0	16.0	2.9	39.9	25	100.4	65
Leather products	3.6	.4	.1	4.1	13	4.2	13
Knitted goods	2.4	.6	0	3.0	12	4.2	17
Rubber products	3.0	.5	.1	3.6	10	4.6	12
Paper and allied products	12.1	10.7	.2	23.0	9	31.7	13
Textiles	5.5	2.8	.1	8.4	8	11.5	11
Clothing	4.7	.9	0	5.6	6	6.5	7
Printing and publishing	1.9	.8	0	2.7	2	3.3	3
Petroleum and coal	1.2	0	.5	1.7	1	11.9	9
Durable-goods							
Furniture and fixtures	4.7	1.6	.2	6.5	16	7.0	18
Miscellaneous manufactures	7.2	1.8	.8	9.7	14	12.1	18
Nonmetallic minerals	5.4	3.2	.9	9.5	12	16.0	20
Electrical products	10.0	1.5	1.2	12.7	9	14.9	10
Fabricated metals	3.3	1.4	.6	5.4	3	15.6	9
Machinery	1.6	.2	.7	2.4	3	3.7	4
Transport equipment	2.3	.2	.3	2.8	1	5.4	2
Primary metals	.9	.9	1.4	3.2	1	8.4	2
Wood manufactures	.1	.3	.2	.6	0.4	2.8	2
All industries	197.3 ^a	112.9 ^a	18.9 ^a	329.1 ^a	12	686.0 ^a	25

^aData may not add to totals because of rounding.

TABLE 33. ESTIMATES OF CONSUMPTION OF PAPER AND WOOD PACKING CONTAINERS AND SUPPLIES AND OF ALL PACKING SUPPLIES IN MANUFACTURING INDUSTRIES, CANADA, 1966

Principal industries	Folding and corrugated boxes and cartons	Paper bags, labels, wrappers (\$ millions)	Pallets and wood and fiber boxes and crates	Paper and wood packing supplies		All packing supplies	
				Total value (\$ millions)	Value per \$1,000 of shipments	Total value (\$ millions)	Value per \$1,000 of shipments
Nondurable-goods							
Tobacco products	8.7	2.9	3.3	14.9	35	35.7	83
Food and beverages	155.3	58.0	8.4	221.7	31	514.2	73
Chemical products	23.6	12.3	1.4	37.3	17	132.8	61
Leather products	4.3	.6	0	4.9	13	5.5	15
Paper and allied products	15.8	15.2	2.7	33.7	11	46.8	15
Knitted goods	2.0	1.6	0	3.6	11	5.7	18
Textiles	6.8	7.6	.2	14.6	11	19.0	14
Rubber goods	3.9	1.1	0	4.9	9	5.9	11
Clothing	4.4	2.5	0	6.9	6	9.9	9
Printing and publishing	3.3	0	1.1	4.4	4	5.7	5
Petroleum and coal	1.1	0	.1	1.1	1	13.8	9
Durable-goods							
Furniture and fixtures	7.6	1.9	.1	9.5	15	11.3	19
Miscellaneous manufactures	10.9	1.7	.4	13.1	13	18.9	19
Nonmetallic minerals	6.8	5.4	1.9	14.1	13	18.9	17
Electrical products	13.9	1.7	2.5	18.2	8	23.6	11
Fabricated metals	10.8	2.4	1.7	14.9	5	21.0	8
Primary metals	1.6	2.2	5.2	9.0	3	17.3	6
Machinery	2.0	.2	.8	3.0	2	5.3	4
Wood manufactures	.8	.6	.1	1.6	1	4.6	3
Transportation equipment	3.5	.1	2.0	5.6	1	10.1	2
All industries	287.1 ^a	118.3 ^a	31.7 ^a	437.1 ^a	12	926.1 ^a	25

^aData may not add to totals because of rounding.

SECTION 8

PRODUCTIVITY IN LOGGING AND SAWMILLING

TABLE 34. DELIVERIES^a OF ROUNDWOOD PER MAN-HOUR PAID
IN THE LOGGING INDUSTRY, BY PROVINCE AND
REGION, CANADA, 1963-1968*(cubic feet per man-hour paid)*

Province and region	1963	1964	1965	1966	1967	1968
Atlantic Region	13	12	13	13	14	17
Newfoundland	13	10	11	13	13	16
Nova Scotia	14	13	12	12	13	16
New Brunswick	13	13	15	14	15	18
Quebec	12	12	13	14	15	19
Ontario	16	16	17	18	19	23
Prairie Region	20	21	21	23	23	30
British Columbia	46	46	48	46	46	49
Canada	21	21	23	23	24	28

^aBased on shipments originating in logging industry proper. For qualifications on these indicators see explanatory note to table. Equivalents in man-hours per cunit can be estimated by dividing figures into 100.

TABLE 35. ESTIMATES OF OUTPUT OF LUMBER PER MAN-HOUR
PAID IN SAWMILLS AND PLANING MILLS, BY
PROVINCE, CANADA, 1963-1968

(board feet)

Province and region	1963	1964	1965	1966	1967	1968
Atlantic Region	52	55	52	50	48	53
Newfoundland	33	37	26	25	21	38
Nova Scotia	50	53	51	48	49	58
New Brunswick	55	59	55	53	50	50
Quebec	63	67	67	68	68	77
Ontario	73	71	69	71	63	71
Prairie Region	58	63	66	62	85	83
Manitoba	61	44	61	71	85	98
Saskatchewan	60	42	45	65	87	97
Alberta	56	71	71	61	84	79
British Columbia	128	130	130	136	145	152
Canada	98	100	100	102	105	112

SECTION 9

TRENDS IN VALUES OF LOGS

TABLE 36. ESTIMATES OF VALUES PER CUNIT OF DELIVERIES
OF ROUNDWOOD BY THE LOGGING INDUSTRY, BY
PROVINCE AND REGION, CANADA, 1963-1968*(in dollars)*

Province and region	1963	1964	1965	1966	1967	1968
Atlantic Region	25	25	26	27	28	28
Newfoundland	30	30	31	32	33	34
Nova Scotia	20	22	23	23	23	24
New Brunswick	25	25	25	26	28	27
Quebec	27	28	28	30	33	35
Ontario	31	30	30	34	34	34
Prairie Region	21	22	22	25	25	25
British Columbia	25	27	29	29	29	32
Canada	26	27	29	30	31	32

TABLE 37. ESTIMATES OF VALUES PER CUNIT OF PULPWOOD
AND WOOD RESIDUE USED IN PULP AND PAPER
MILLS, BY REGION, CANADA, 1961-1968

(in dollars)

Year	Atlantic	Quebec	Ontario	Prairies	British Columbia	Canada
1961	29	32	33	24	19	29
1962	29	31	33	24	18	28
1963	28	31	33	23	18	28
1964	28	31	33	24	21	28
1965	28	32	33	24	22	29
1966	30	33	34	26	23	30
1967	31	36	36	27	22	31
1968	31	36	37	26	23	31

SECTION 10

INVESTMENT IN FORESTRY AND FOREST-BASED INDUSTRIES

TABLE 38. ESTIMATES OF CAPITAL AND REPAIR EXPENDITURES IN
LOGGING AND IN WOOD AND PAPER AND ALLIED INDUSTRIES,
CANADA, 1963-1970*(millions of current dollars)*

Year and industry and industry groups	Capital			Repair			Total, capital and repair
	Construction	Machinery and equipment	Total	Construction	Machinery and equipment	Total	
1963							
Logging	28	32	60	15	31	46	106
Wood industries	13	38	51	6	37	43	94
Paper and allied industries	40	165	205	13	108	121	326
1964							
Logging	39	49	88	18	39	57	145
Wood industries	16	45	61	7	42	49	110
Paper and allied industries	69	250	319	11	124	135	454
1965							
Logging	43	53	96	17	38	55	151
Wood industries	23	53	76	7	49	56	132
Paper and allied industries	111	306	417	15	133	148	565
1966							
Logging	43	49	92	18	40	58	150
Wood industries	23	49	72	8	51	59	131
Paper and allied industries	137	413	550	14	155	169	719
1967							
Logging	38	48	86	19	51	70	156
Wood industries	16	46	62	10	57	67	129
Paper and allied industries	111	357	468	13	175	188	656
1968							
Logging	37	40	77	14	44	58	135
Wood industries	18	53	71	9	57	66	137
Paper and allied industries	70	221	291	13	176	189	480
1969 ^a							
Logging	52	54	106	16	60	76	182
Wood industries	43	108	151	9	64	73	224
Paper and allied industries	110	267	377	14	201	215	592
1970 ^a							
Logging	49	43	92	15	65	80	172
Wood industries	36	96	132	7	62	69	201
Paper and allied industries	139	373	512	14	200	214	726

^aData for 1969 are actual and for 1970 are preliminary actual.

SECTION 11

MANPOWER TRENDS IN FORESTRY AND FOREST-BASED INDUSTRIES

TABLE 39. AVERAGE HOURLY EARNINGS OF WAGE EARNERS IN WOOD AND PAPER AND ALLIED INDUSTRIES, BY REGION, CANADA, 1962-1969

(in dollars)

Region and industry	1962	1963	1964	1965	1966	1967	1968	1969
Atlantic Region								
Wood industries	1.07	1.12	1.18	1.24	1.29	1.39	1.53	1.66
Paper and allied industries	2.33	2.38	2.43	2.48	2.74	2.92	3.06	3.32
Quebec								
Wood industries	1.17	1.22	1.26	1.32	1.42	1.55	1.70	1.82
Paper and allied industries	2.17	2.22	2.29	2.37	2.62	2.77	2.95	3.20
Ontario								
Wood industries	1.43	1.47	1.52	1.60	1.73	1.88	2.07	2.28
Paper and allied industries	2.19	2.24	2.29	2.36	2.55	2.71	2.89	3.12
Prairie Region								
Wood industries	1.49	1.53	1.59	1.66	1.82	1.99	2.23	2.44
British Columbia								
Wood industries	2.19	2.28	2.41	2.55	2.73	2.96	3.18	3.42
Paper and allied industries	2.59	2.69	2.85	3.05	3.24	3.50	3.66	3.94
Canada								
Wood industries	1.71	1.79	1.86	1.95	2.09	2.27	2.47	2.68
Paper and allied industries	2.23	2.29	2.36	2.45	2.67	2.85	3.03	3.28

TABLE 40. AVERAGE WEEKLY HOURS OF WORK OF WAGE EARNERS
IN WOOD AND IN PAPER AND ALLIED INDUSTRIES,
BY REGION, CANADA, 1962-1969

Region and industry	1962	1963	1964	1965	1966	1967	1968	1969
Atlantic Region								
Wood industries	44.2	44.4	44.2	44.1	43.9	43.3	43.0	42.9
Paper and allied industries	40.6	40.7	41.2	41.7	41.7	41.0	41.2	41.5
Quebec								
Wood industries	46.9	46.1	46.8	46.9	47.0	46.3	46.3	45.2
Paper and allied industries	42.3	42.6	43.1	43.1	42.9	42.1	42.0	41.8
Ontario								
Wood industries	42.9	42.9	42.9	42.8	42.2	41.8	41.5	40.6
Paper and allied industries	40.8	41.1	41.4	41.5	41.5	41.2	40.9	40.9
Prairie Region								
Wood industries	39.6	39.5	39.6	39.8	38.9	38.4	38.2	37.8
British Columbia								
Wood industries	37.2	37.3	37.3	37.3	36.5	37.0	37.0	36.4
Paper and allied industries	38.6	37.2	36.5	39.3	39.7	39.5	39.7	39.6
Canada								
Wood products	40.6	40.5	40.7	40.8	40.1	40.1	40.1	39.3
Paper and allied industries	41.1	41.3	41.7	41.8	41.8	41.3	41.2	41.1

TABLE 41. AVERAGE WEEKLY WAGES AND SALARIES IN
LOGGING AND IN WOOD AND PAPER AND ALLIED
INDUSTRIES, BY REGION, CANADA, 1962-1969

(in dollars)

Region and industry	1962	1963	1964	1965	1966	1967	1968	1969
Atlantic Region								
Logging	66.02	68.91	71.39	67.13	64.40	70.14	76.20	83.50
Wood industries	48.62	50.92	52.71	56.78	59.53	63.97	69.37	75.20
Paper and allied industries	99.97	102.37	105.66	109.35	120.33	125.53	133.13	144.04
Quebec								
Logging	73.73	82.98	89.77	94.24	111.13	116.51	123.56	132.24
Wood industries	58.04	60.40	63.69	66.76	71.87	78.18	85.39	91.33
Paper and allied industries	98.35	101.80	105.62	109.38	118.52	124.30	132.40	142.16
Ontario								
Logging	95.36	93.10	98.65	101.30	109.86	123.90	124.97	139.89
Wood industries	66.27	68.10	70.35	73.74	78.62	85.20	92.63	99.94
Paper and allied industries	96.11	99.18	101.39	104.92	113.09	119.49	126.40	135.83
Prairie Region								
Logging	59.62	62.93	68.16	71.16	71.99	80.52	102.47	114.61
Wood	63.12	64.36	67.11	69.89	75.72	81.87	92.54	99.11
British Columbia								
Logging	102.53	105.38	112.23	123.48	128.23	139.06	150.82	160.00
Wood industries	85.56	89.35	94.36	100.28	104.64	114.66	123.54	130.78
Paper and allied industries	106.77	111.10	118.89	127.57	137.32	147.24	155.39	166.72
Canada								
Logging	82.15	87.02	92.13	96.71	104.79	113.64	122.04	133.60
Wood industries	72.27	75.27	78.51	83.13	88.05	95.79	104.03	111.08
Paper and allied industries	98.28	101.63	105.31	109.68	118.69	125.35	133.15	143.17

TABLE 42. EMPLOYMENT INDEXES IN LOGGING AND IN
WOOD AND PAPER AND ALLIED INDUSTRIES,
BY REGION, CANADA, 1962-1969

(1961 = 100)

Region and industry	1962	1963	1964	1965	1966	1967	1968	1969
Atlantic Region								
Logging	85.0	78.0	93.6	89.0	89.4	81.6	76.3	68.3
Wood industries	99.6	102.2	112.8	111.5	105.4	94.6	89.8	94.3
Paper and allied industries	101.4	101.9	105.4	112.0	114.7	118.8	117.3	115.5
Quebec								
Logging	100.6	92.2	100.7	100.5	103.3	106.2	86.3	78.4
Wood industries	109.0	110.3	117.9	120.3	114.4	112.9	115.0	118.8
Paper and allied industries	101.1	101.4	104.6	107.0	112.8	112.7	111.1	115.9
Ontario								
Logging	102.9	105.9	103.4	103.9	106.0	102.9	90.0	90.7
Wood industries	106.2	108.7	113.6	113.8	118.3	112.6	109.9	109.9
Paper and allied industries	102.2	103.1	106.5	111.6	117.3	117.9	116.0	119.7
Prairie Region								
Logging	114.9	125.0	120.8	135.6	145.7	129.2	101.8	100.4
Wood industries	101.8	101.9	105.2	105.5	103.7	114.2	117.9	121.8
British Columbia								
Logging	105.0	109.7	110.7	118.3	118.9	109.2	111.5	120.4
Wood industries	102.6	107.1	108.2	111.8	113.0	105.8	106.6	113.6
Paper and allied industries	102.2	106.6	113.2	123.9	138.2	140.8	144.1	150.8
Canada								
Logging	99.5	96.9	102.8	104.1	106.2	102.3	91.1	88.7
Wood industries	104.3	107.4	111.2	113.4	113.1	108.2	108.4	113.0
Paper and allied industries	102.1	103.2	106.8	111.1	117.5	118.4	117.6	121.7

TABLE 43. SALARIES AND WAGES AS A PERCENT OF VALUE ADDED BY PRODUCTION IN LOGGING AND IN WOOD AND PAPER AND ALLIED INDUSTRIES, CANADA, 1961-1968

Year and industry	Salaries and wages	Value added by production	Salaries and wages paid as percent of value added by production
	<i>(thousands of dollars)</i>		<i>(percent)</i>
1961	a	a	a
Logging			
Wood industries	292,700	436,501	67
Paper and allied industries	493,444	1,070,299	46
1962	a	a	a
Logging			
Wood industries	311,975	510,470	61
Paper and allied industries	518,784	1,130,652	46
1963			
Logging	275,476	439,288	63
Wood industries	340,750	571,917	60
Paper and allied industries	541,195	1,181,141	46
1964			
Logging	300,252	480,058	63
Wood industries	367,005	621,141	59
Paper and allied industries	588,358	1,296,089	45
1965			
Logging	315,948	528,263	60
Wood industries	398,939	655,177	61
Paper and allied industries	634,425	1,347,426	47
1966			
Logging	351,471	596,464	59
Wood industries	429,116	692,570	62
Paper and allied industries	727,120	1,454,583	50
1967			
Logging	366,030	614,907	60
Wood industries	451,192	733,283	62
Paper and allied industries	781,885	1,434,412	55
1968			
Logging	360,009	644,108	56
Wood industries	490,721	896,061	55
Paper and allied industries	836,084	1,479,229	56

^a Not available.

SECTION 12

TRENDS IN PRICE INDEXES

TABLE 44. INDUSTRY SELLING-PRICE INDEXES OF
WOOD INDUSTRIES, CANADA, 1961-1969

(1961 = 100)

Period	Saw mills	Sash, door and planing mills	Plywood and veneer mills	Douglas- fir plywood	Shingle mills	Wooden box factories	Composite index, wood industries
1961	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1962	104.4	101.2	102.6	105.3	112.2	101.4	103.3
1963	107.5	103.5	108.2	115.0	129.8	101.3	106.7
1964	109.8	107.0	110.7	117.6	140.1	101.2	109.4
1965	112.3	111.6	113.2	120.1	138.1	101.7	112.4
1966	116.5	118.7	114.7	120.8	131.3	106.3	116.9
1967	120.0	124.5	118.6	125.9	138.3	116.8	121.3
1968	140.0	130.0	127.5	139.2	196.5	123.4	135.9
Mar.	135.5	127.5	123.7	133.8	178.2	123.6	132.0
June	138.2	130.1	126.5	137.9	184.8	123.4	134.6
Sept.	144.8	131.3	130.5	143.7	201.2	124.3	139.4
Dec.	153.9	134.5	133.6	148.2	248.6	124.1	146.3
1969	146.5	145.2	140.8	158.8	224.8	125.4	146.0
Mar.	173.8	143.3	144.2	164.2	284.8	124.2	161.5
June	145.7	147.3	150.5	174.4	199.1	126.1	147.2
Sept.	130.4	144.2	140.0	156.9	201.4	126.1	136.7
Dec.	128.9	145.8	130.4	142.6	182.1	125.9	134.5

TABLE 45. INDUSTRY SELLING PRICE-INDEXES OF SELECTED
SOFTWOOD LUMBERS, BY REGION, CANADA, 1961-1969

(1961 = 100)

Period	British Columbia					East of Rockies		
	Coast			Interior		Spruce	Pine	
	Douglas- fir	Cedar	Hemlock	Douglas- fir	Spruce		White	Jack and lodgepole
1961	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1962	a	107.6	101.4	a	a	101.9	98.1	98.7
1963	a	116.8	107.1	a	99.2	102.1	98.2	100.2
1964	117.4	130.7	111.5	113.0	99.5	103.2	99.8	101.5
1965	118.9	138.2	110.8	116.2	102.6	106.8	102.0	103.0
1966	122.9	145.1	116.5	117.9	105.1	111.4	105.2	109.7
1967	121.9	152.6	121.7	125.0	105.6	114.4	107.1	117.5
1968	148.7	183.7	149.0	155.0	129.2	122.4	109.7	126.6
Mar.	143.0	172.2	143.7	154.4	127.0	119.5	107.1	121.6
June	149.1	182.2	146.4	153.9	126.2	120.5	108.0	123.4
Sept.	152.9	190.7	157.3	162.8	130.5	126.9	111.3	131.3
Dec.	159.6	206.3	165.7	177.1	155.3	126.9	115.7	134.5
1969	163.0	203.8	152.8	153.8	129.8	123.1	129.2	131.1
Mar.	175.5	247.3	188.1	216.8	183.7	138.6	120.8	159.1
June	174.1	200.0	154.0	136.9	119.2	127.7	134.6	129.1
Sept.	152.3	187.5	129.3	118.5	102.0	111.5	132.4	111.7
Dec.	146.4	180.8	127.4	127.9	102.3	105.6	131.3	115.1

^aNot available.

TABLE 46. INDUSTRY SELLING-PRICE INDEXES OF SELECTED HARDWOOD
LUMBERS AND FLOORING, EASTERN CANADA, 1961-1969

(1961 = 100)

Period	Lumber		Flooring	
	Yellow birch	Hard maple	Yellow birch	Red oak
1961	100.0	100.0	100.0	100.0
1962	102.3	102.0	99.4	101.8
1963	102.1	104.8	98.2	101.1
1964	101.8	103.1	98.5	109.7
1965	103.8	102.3	102.7	112.4
1966	108.9	112.4	115.4	122.2
1967	111.9	122.6	126.9	127.4
1968	114.3	125.4	134.7	131.0
Mar.	114.3	125.7	134.2	130.1
June	114.3	125.3	134.2	130.1
Sept.	114.5	125.1	134.2	130.1
Dec.	114.9	125.1	137.3	134.6
1969	115.6	113.9	141.2	147.3
Mar.	115.6	114.5	141.2	142.8
June	115.7	114.5	141.2	147.9
Sept.	115.6	114.5	141.3	149.6
Dec.	115.5	110.5	141.3	151.5

TABLE 47. INDUSTRY SELLING-PRICE INDEXES OF POLES
AND CROSS ARMS USED IN TRANSMISSION LINES
AND OF POLES USED IN DISTRIBUTION SYSTEMS,
CANADA, 1961-1969

(1961 = 100)

Year	Transmission lines		Distribution systems
	Poles, western cedar	Cross arms	Poles, western cedar
1961	100.0	100.0	100.0
1962	100.4	111.9	103.6
1963	103.8	116.6	108.1
1964	101.8	128.0	107.2
1965	115.2	128.2	121.8
1966	130.7	129.9	131.4
1967	138.8	133.2	125.4
1968	136.0	138.6	119.0
1969	134.3	157.5	125.8

TABLE 48. INDUSTRY SELLING-PRICE INDEXES OF PAPER
AND ALLIED INDUSTRIES, CANADA, 1961-1969

(1961 = 100)

Year	Pulp and paper mills	Folded and set-up box manufacturers	Corrugated-box manufacturers	Paper-bag manufacturers	Asphalt- roofing manufacturers	Other paper converters	Composite index, paper and allied industries
1961	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1962	103.0	101.0	100.0	100.0	95.1	99.8	102.1
1963	103.6	98.6	101.1	100.2	99.3	100.0	102.6
1964	105.1	100.6	102.4	100.9	94.0	102.4	104.0
1965	105.9	101.7	102.7	101.4	85.8	104.0	104.6
1966	107.7	107.1	106.9	104.4	84.9	107.3	106.9
1967	110.2	111.2	112.4	105.4	88.8	111.8	109.8
1968	110.1	112.9	114.0	108.0	95.8	114.6	110.4
Mar.	110.6	112.2	112.7	108.7	93.4	114.6	110.6
June	110.1	113.3	112.7	107.7	97.8	114.5	110.4
Sept.	109.8	113.8	114.9	107.8	97.9	114.7	110.4
Dec.	109.9	113.8	117.2	106.2	98.2	114.9	110.6
1969	113.6	115.7	119.7	109.2	99.8	117.6	113.9
Mar.	112.7	114.7	117.1	106.8	100.3	116.9	112.9
June	113.6	116.1	121.5	109.8	99.2	117.0	114.0
Sept.	114.4	116.3	121.5	111.1	101.4	118.3	114.8
Dec.	113.9	116.7	121.5	111.1	99.9	119.0	114.5

TABLE 49. INDUSTRY SELLING-PRICE INDEXES OF SELECTED PRODUCTS
IN THE PAPER AND ALLIED INDUSTRIES, CANADA, 1961-1969

(1961 = 100)

Period	Wood pulp, Paper grades				Newsprint, white in rolls		Fine paper	Building boards, softboards	Folding boxes and cartons
	Sulphite, bleached		Sulphate, unbleached						
	Domestic market	Export market	Domestic market	Export market	Domestic market	Export market			
							Sulphite and sulphate		
1961	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1962	97.3	103.0	98.9	101.5	98.9	105.9	100.0	96.6	100.8
1963	95.2	102.4	98.6	106.0	99.0	107.0	100.7	95.7	98.0
1964	100.3	108.2	106.9	114.3	98.6	106.8	103.2	89.2	99.8
1965	103.3	112.2	104.6	113.9	98.4	106.7	104.1	92.4	101.1
1966	103.3	112.1	104.8	114.6	99.1	109.4	108.8	88.6	107.1
1967	103.1	112.2	104.8	115.3	102.2	112.7	114.5	89.7	111.3
1968	101.8	111.5	102.4	112.0	103.4	113.4	113.0	92.2	112.5
Mar.	101.5	112.6	102.8	113.4	103.3	114.5	112.6	91.9	112.0
June	101.5	111.3	102.1	111.8	103.3	113.6	112.6	91.9	113.0
Sept.	102.0	110.9	102.1	112.1	103.4	112.7	112.6	92.4	113.2
Dec.	102.0	110.7	102.1	112.0	103.4	112.6	117.2	92.8	113.2
1969	105.2	114.3	104.6	115.7	106.9	117.2	117.8	99.4	114.6
Mar.	103.6	112.3	103.4	112.2	107.0	117.3	117.8	98.1	113.7
June	104.3	113.4	104.1	115.1	107.0	117.5	117.8	100.2	115.0
Sept.	105.7	115.7	104.1	117.3	106.8	117.5	117.8	102.4	115.3
Dec.	107.6	115.7	106.9	118.3	106.8	116.3	117.8	98.9	115.6

TABLE 50. PRICE INDEX NUMBERS OF SELECTED RESIDENTIAL BUILDING MATERIALS AND
AGGREGATE INDEX OF NONRESIDENTIAL-BUILDING MATERIALS, CANADA, 1961-1969

(1961 = 100)

Period	Selected residential building materials						Aggregate index, nonresidential building materials
	Lumber and lumber products	Wallboard and insulation board	Roofing materials	Concrete products	Metal products	Aggregate index, residential building materials	
1961	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1962	101.5	100.9	93.4	99.9	99.6	100.7	99.1
1963	105.5	101.2	99.5	102.9	102.4	104.1	101.8
1964	111.5	106.8	97.5	106.2	108.7	109.5	106.6
1965	118.5	112.0	89.2	110.9	115.4	115.8	111.5
1966	123.1	114.9	90.0	116.1	117.4	120.5	115.4
1967	129.1	118.1	96.5	120.5	115.4	125.3	117.8
1968	138.7	122.0	108.7	122.0	115.1	132.1	120.7
Mar.	135.0	120.1	105.0	122.2	115.1	130.0	120.4
June	138.2	123.3	112.1	122.2	115.1	132.2	120.9
Sept.	141.5	123.3	112.1	121.9	115.2	133.7	120.8
Dec.	144.0	123.3	112.1	122.0	115.6	135.0	121.8
1969	147.8	127.8	112.9	125.4	121.8	139.2	126.1
Mar.	154.2	123.6	114.0	124.1	119.6	142.1	125.5
June	149.3	129.6	110.8	124.6	120.9	139.8	126.5
Sept.	143.3	129.5	114.2	127.3	122.6	137.3	126.6
Dec.	142.5	130.1	118.4	127.3	127.9	137.5	127.9

PART III.
SOURCES AND EXPLANATORY NOTES

SOURCES AND EXPLANATORY NOTES

Sources and explanatory notes are presented in the order of the material listed in Parts I and II. Frequent reference is made to the Dominion Bureau of Statistics. In the following notes this organization is referred to by the abbreviation "D.B.S."

Data from Census of Industry reports, D.B.S., are based on the Revised Standard Industrial Classification and New Establishment Concept.

Estimates of Canadian per capita consumption of newsprint, fine, book and writing paper, tissue and sanitary paper, wrapping paper, paperboards and building boards are shown in Table 13 and in Tables 15-19 in the order named. Estimates of per capita consumption recorded in this report are based on mill shipments less exports plus imports. They differ in some years from those shown in Reference Tables, 1970, Canadian Pulp and Paper Association, which are based on production less exports plus imports.

The unit of measure "cunit" represents 100 cubic feet of wood. The term billion is equivalent to 1,000 million.

PART I

CHARTS

CHART A. TRENDS IN ECONOMIC INDICATORS IN FORESTRY AND FOREST-BASED INDUSTRIES, CANADA

Chart based on percentages indicated in text.

FIGURE 1. UTILIZATION OF ROUNDWOOD AND WOOD RESIDUE, CANADA, 1961-1968

Chart based on data shown in Tables 5 and 7.

FIGURE 2. SHIPMENTS OF NEWSPRINT, CANADA, 1961-1969

Chart based on data shown in Table 13.

FIGURE 3. PRODUCTION AND DISTRIBUTION OF SOFTWOOD LUMBER, CANADA, 1961-1969

Chart based on data shown in Table 20.

FIGURE 4. AVERAGE WEEKLY WAGES AND SALARIES IN THE LOGGING, WOOD, AND PAPER AND ALLIED INDUSTRIES, CANADA, 1963-1969

Chart based on data shown in Table 41.

FIGURE 5. INDEXES OF EMPLOYMENT IN THE LOGGING, WOOD, AND PAPER AND ALLIED INDUSTRIES, CANADA, 1962-1969

Chart based on data shown in Table 42.

FIGURE 6. INDUSTRY SELLING-PRICE INDEX OF DOUGLAS-FIR PLYWOOD, CANADA, 1963-1969

Chart based on data shown in Table 44.

FIGURE 7. INDUSTRY SELLING-PRICE INDEXES OF NEWSPRINT, CANADA, 1963-1969
Chart based on data shown in Table 49.

PART II
TABULAR MATERIAL

TABLE 1. ESTIMATES OF AREA OF FOREST LAND AND VOLUME OF MERCHANTABLE
TIMBER IN INVENTORIED FORESTS ONLY, BY PROVINCE, CANADA, 1968

Data compiled by the Forest Economics Research Institute, Department of Fisheries and Forestry from estimates prepared by provincial departments of forestry.

Forest land is defined as land, excluding agricultural land, capable of producing stands of trees 4 inch dbh and larger on 10% or more of the area.

TABLE 2. DISTRIBUTION OF MERCHANTABLE TIMBER, BY PROVINCE AND REGION,
CANADA

Calculations based on data in Canadian Forestry Statistics, D.B.S., Cat. No. 25-202.

TABLE 3. ESTIMATES OF PRODUCTION OF ROUNDWOOD AND APPARENT DOMESTIC DIS-
APPEARANCE, CANADA, 1961-1968

Data on production obtained from Logging, D.B.S., Cat. No. 25-201. Data on exports and imports converted to cunits from figures in Trade of Canada, Exports and Trade of Canada, Imports, D.B.S., Cat. No. 65-004 and 65-007.

The term "production" in this table refers to the total cut of roundwood at on-site locations in logging operations and on farms, before delivery to mills or points of transportation.

The term "roundwood" as reported for total forest production includes logs and bolts, pulpwood, posts and pilings, round mining timber, fence posts and fuelwood cut for logs for sale and for home use.

Excluded from figures in this table and in Table 4 are losses caused by insects, disease or natural mortality. Losses from insects and disease alone are estimated to be in excess of 1 billion cubic feet of merchantable timber annually.

Export permits are required for all logs and pulpwood exported from Canada. The provinces control all timber on Crown lands and the Federal Government issues export permits on their advice under provisions of the Export and Import Permits Act, Chapter 27, 1953-54, and in British Columbia of The Timber Manufacture Act, March 12, 1906.

TABLE 4. ESTIMATES OF PRODUCTION OF ROUNDWOOD BY PROVINCE AND REGION, CANADA, 1961-1968

Sources and terminology are the same as for Table 3.

TABLE 5. UTILIZATION OF INDUSTRIAL ROUNDWOOD IN MAJOR CONSUMING INDUSTRIES, CANADA, 1961-1968

"Industrial" roundwood excludes fuelwood and wood for charcoal.

Data on utilization in consuming industries are derived from appropriate Census of Industry reports, D.B.S. Quantities of inputs were converted to cunits in accordance with conversion factors shown in Logging, D.B.S., Cat. No. 25-201.

TABLE 6. UTILIZATION OF HIGH-DENSITY HARDWOOD ROUNDWOOD IN MAJOR CONSUMING INDUSTRIES, CANADA, 1961-1968

Data on utilization in consuming industries are derived from appropriate Census of Industry reports, D.B.S. Quantities of inputs were converted to cunits in accordance with conversion factors shown in Logging, D.B.S. Cat. No. 25-201.

TABLE 7. UTILIZATION OF PULPWOOD AND WOOD RESIDUE IN PULP AND PAPER MILLS, EXPORTS, IMPORTS AND APPARENT PRODUCTION, CANADA, 1961-1969

Data on quantities used in pulp and paper mills for the years 1961-1968 from Pulp and Paper Mills, D.B.S., Cat. No. 36-204. Data for 1969 from Pulpwood and Wood Residue Statistics, D.B.S., Cat. No. 25-001. Data on exports and imports from Trade of Canada, Exports and Trade of Canada, Imports, D.B.S., Cat. No. 65-004 and 65-007.

Exports of wood residue include wood waste and pulpwood chips. Quantities converted to cunits from weight measure on the basis of 1 ton = .355 cunits.

Apparent production is based on the residual of quantities used in pulp and paper mills and exports less imports, without adjustments for changes in year-end inventories.

TABLE 8. UTILIZATION OF PULPWOOD IN PULP AND PAPER MILLS, BY SPECIES, CANADA, 1961-1968

Data obtained from Pulp and Paper Mills, D.B.S. Cat. No. 36-204. Quantities converted to cunits from conversion factors shown in Logging, D.B.S., Cat. No. 25-201.

TABLE 9. PRODUCTION, EXPORTS, IMPORTS AND DOMESTIC DISAPPEARANCE OF WOOD PULP IN PULP AND PAPER MILLS, CANADA, 1961-1969

Data on production and consumption for the period 1961-1968 obtained from Pulp and Paper Mills, D.B.S., Cat. No. 36-204. Data on production and consumption for 1969 are from Reference Tables, 1970, Canadian Pulp and Paper Association.

Data on exports for the period 1961-1966 obtained from Canadian Forestry Statistics, D.B.S., Cat. No. 25-202. Data for 1968 and 1969 are from Trade of Canada, Exports, D.B.S., Cat. No. 65-004.

Data on imports obtained from Trade of Canada, Imports, D.B.S., Cat. No. 65-007.

TABLE 10. PRODUCTION AND CONSUMPTION OF KINDS OF WOOD PULPS IN PULP AND PAPER MILLS, CANADA, 1961-1969

Data for the period 1961-1968 derived from Pulp and Paper Mills, D.B.S., Cat. No. 36-204. Data for 1969 are based on estimates in Reference Tables, 1970, Canadian Pulp and Paper Association.

TABLE 11. EXPORTS AND IMPORTS OF KINDS OF WOOD PULPS, CANADA, 1961-1969

Data for the period 1961-1969 based on quantities shown in Trade of Canada, Exports and Trade of Canada, Imports, D.B.S., Cat. No. 65-004 and 65-007.

TABLE 12. EXPORTS OF WOOD PULPS TO WORLD MARKETS, CANADA, 1961-1969

Data for the period 1961-1969 based on quantities shown in Trade of Canada, Exports, D.B.S., Cat. No. 65-004.

TABLE 13. SHIPMENTS, EXPORTS AND APPARENT DOMESTIC CONSUMPTION OF NEWSPRINT, CANADA, 1961-1969

Data on shipments and exports for the period 1961-1968 obtained from Canadian Forestry Statistics, D.B.S., Cat. No. 25-202, and for exports in 1969 from Trade of Canada, Exports, D.B.S., Cat. No. 65-004. Data on shipments in 1969 in Canada from Reference Tables, 1970, Canadian Pulp and Paper Association. Total mill shipments represent the sum of exports plus domestic shipments.

TABLE 14. SHIPMENTS OF NEWSPRINT TO DOMESTIC AND WORLD MARKETS, CANADA, 1961-1969

The source for total shipments for the period 1961-1968 is the same as for Table 13. Data on domestic shipments for 1969 are from Reference Tables, 1970, Canadian Pulp and Paper Association, and are preliminary.

Exports for the period are from Trade of Canada, Exports, D.B.S., Cat. No. 65-004.

In general, data from D.B.S. sources on newsprint correspond closely to those prepared by the Newsprint Division, C.P.P.A. The D.B.S. data include minor quantities of grades not classed as newsprint by the Newsprint Division, C.P.P.A.

TABLE 15. SHIPMENTS, EXPORTS, IMPORTS AND APPARENT DOMESTIC CONSUMPTION OF FINE, BOOK AND WRITING PAPERS, CANADA, 1961-1969

Data on shipments from 1961-1968 obtained from Pulp and Paper Mills, D.B.S., Cat. No. 36-204, and for 1969 from Reference Tables, 1970, Canadian Pulp and Paper Association.

Data on exports and imports calculated from quantities shown in Trade of Canada, Exports and Trade of Canada, Imports, D.B.S., Cat. No. 65-004 and 65-007.

TABLE 16. SHIPMENTS, EXPORTS, IMPORTS AND APPARENT DOMESTIC CONSUMPTION OF TISSUE AND SANITARY PAPER, CANADA, 1961-1969

Sources are the same as for Table 15. Apparent domestic consumption consists of shipments plus imports less exports.

TABLE 17. SHIPMENTS, EXPORTS, IMPORTS AND APPARENT DOMESTIC CONSUMPTION OF WRAPPING PAPER, CANADA, 1961-1969

Sources are the same as for Table 15.

TABLE 18. SHIPMENTS, EXPORTS, IMPORTS AND APPARENT DOMESTIC CONSUMPTION OF PAPERBOARDS, CANADA, 1961-1969

Sources are the same as for Table 15.

TABLE 19. SHIPMENTS, EXPORTS, IMPORTS AND APPARENT DOMESTIC CONSUMPTION OF BUILDING BOARDS AND PAPER, CANADA, 1961-1968

Sources are the same as for Table 15. Data include softboards and hardboards.

TABLE 20. PRODUCTION, EXPORTS, IMPORTS AND APPARENT DOMESTIC CONSUMPTION OF SOFTWOOD LUMBER, CANADA, 1961-1969

Data on production for the years 1961-1968 obtained from Canadian Forestry Statistics, D.B.S., Cat. No. 25-202, and for 1969 from Production, Shipments and Stocks on Hand of Sawmills East of Rockies, D.B.S., Cat. No. 35-002, February, 1970, and British Columbia, D.B.S., Cat. No. 35-003, December, 1969. Data on seasoning from Cat. No. 35-003, June, 1970.

Data on total exports and imports from Trade of Canada, Exports and Trade of Canada, Imports, D.B.S., Cat. No. 65-004 and 65-007. Regional data on exports were supplied by courtesy of the External Trade Division, D.B.S. Imports through British Columbia from External Trade through British Columbia Customs Ports, Annual, Department of Industrial Development, Trade and Commerce, Province of British Columbia.

Data on apparent domestic consumption are net of changes in year-end stocks.

TABLE 21. PRODUCTION, EXPORTS, IMPORTS AND APPARENT DOMESTIC CONSUMPTION OF HARDWOOD LUMBER, CANADA, 1961-1968

Sources for the period 1961-1968 are the same as for Table 20.

Data on apparent domestic consumption are net of changes in year-end inventories.

TABLE 22. SHIPMENTS OF SELECTED WOOD-BASED BUILDING MATERIALS, CANADA, 1961-1968

Data on shipments of hardwood flooring and tiles for the period 1961-1966 from Hardwood Flooring Industry, D.B.S., Cat. No. 35-203. Data for 1967 and 1968 from Sash, Door and Other Millwork Plants, D.B.S., Cat. No. 35-205.

Data on shipments of shingles and shakes for the period 1961-1963 from Sawmills, D.B.S., Cat. No. 35-204. Data for the years 1964-1968 from Sawmills and Planing Mills, D.B.S., Cat. No. 35-204.

TABLE 23. PRODUCTION, EXPORTS, IMPORTS AND APPARENT DOMESTIC CONSUMPTION OF CONSTRUCTION-GRADE PLYWOOD, CANADA, 1961-1969

Data for the period 1961-1964 and for 1969 obtained from Peeler Logs, Veneers and Plywood, D.B.S., Cat. No. 35-001. Data converted from a 1/4 inch to a 3/8 inch basis by applying a factor of .75 for the years 1961-1963. For the period 1964-1969 data on softwood plywood obtained from the same source without conversion.

Data on exports and imports from Trade of Canada, Exports and Trade of Canada, Imports, D.B.S., Cat. No. 65-004 and 65-007, and were converted to a 3/8 inch base for each of the years shown.

Quantities of imports on a standard thickness were first reported in 1964.

Data on apparent domestic consumption are net of changes in year-end inventories.

TABLE 24. PRODUCTION, EXPORTS AND APPARENT DOMESTIC DISAPPEARANCE OF VENEERS FOR CONSTRUCTION-GRADE PLYWOOD, CANADA, 1961-1969

Sources are the same as for Table 23.

Data on production relate to quantities processed for sale, mainly by veneer mills to plywood mills.

Data on apparent domestic disappearance are net of changes in year-end inventories.

TABLE 25. PRODUCTION, EXPORTS, IMPORTS AND APPARENT DOMESTIC CONSUMPTION
OF HARDWOOD PLYWOOD, CANADA, 1961-1969

Sources are the same as for Table 23.

Data on production include plywood made from imported veneers such as mahogany, walnut and oak.

Apparent domestic consumption is net of changes in year-end inventories.

TABLE 26. PRODUCTION, EXPORTS, IMPORTS AND APPARENT DOMESTIC DISAPPEARANCE
OF HARDWOOD VENEERS, CANADA, 1961-1969

Sources are the same as for Table 23.

Data on production relate to quantities processed for sale, mainly by veneer mills to plywood mills. Poplar veneers are excluded except for small quantities produced during the period 1966-1968.

Data on apparent domestic disappearance are net of changes in year-end inventories.

TABLE 27. SHIPMENTS OF SELECTED WOOD COMPONENTS OF BUILDINGS AND OF
PREFABRICATED BUILDINGS, CANADA, 1961-1968

Data for the period 1961-1963 from Sash, Door and Planing Mills, D.B.S., Cat. No. 35-205 and for the period 1964-1968 from Sash, Door and Other Millwork Plants, D.B.S., Cat. No. 35-205.

Data for the years 1961-1966 for prefabricated buildings are estimated. In general the value of prefabricated buildings includes all pre-manufactured units made of wood or wood and metal in one piece or in sections. Also included are complete components and superstructures assembled to the closing-in stage such as summer cottages.

TABLE 28. SHIPMENTS OF SOFTBOARD BUILDING BOARDS, CANADA, 1961-1969

Data on shipments for the period 1961-1962 and 1965-1968 from Pulp and Paper Mills, D.B.S., Cat. No. 36-204, and for the period 1963-1964 and 1969 from Rigid Insulating Board, D.B.S., Cat. No. 36-002.

Data on shipments of mineral and mineral treated acoustic tiles for the years 1965-1969 from Rigid Insulating Board. Included among these tiles is a small quantity of non acoustic tile.

TABLE 29. PRODUCTION, EXPORTS, IMPORTS AND APPARENT DOMESTIC CONSUMPTION
OF HARDBOARD, CANADA, 1952-1969

Data on production and exports from Hardboard, D.B.S., Cat. No. 36-001. Exports are those reported by manufacturers and therefore may not represent total exports. Data on production in 1967 and 1968 are from Pulp and Paper Mills, D.B.S. Cat. No. 36-204.

Data on imports from Trade of Canada, Imports, Cat. No. 65-007. Quantities converted to square feet on the basis of 1 pound equalling 1 square foot. Imports were first reported as a separate commodity in 1961.

Data on apparent domestic consumption represent the sum of domestic shipments and imports.

TABLE 30. SHIPMENTS, EXPORTS, IMPORTS AND APPARENT DOMESTIC CONSUMPTION OF PARTICLEBOARD, CANADA, 1957-1969

Data for 1957 and 1958 relate to production as shown in The Miscellaneous Wood-Using Industries, D.B.S., Cat. No. 35-207. Data for the period 1962-1968 refer to shipments published in Miscellaneous Wood Industries, D.B.S., Cat. No. 35-208. Data for 1969 from Particle Board, D.B.S., Cat. No. 36-003.

Data on exports from Trade of Canada, Exports, D.B.S. Cat. No. 65-004. A small quantity of building board is included in the amounts shown. Data on exports refer to all thicknesses.

Data on imports from 1964-1968 are estimated from values shown in Trade of Canada, Imports, D.B.S., Cat. No. 65-007. For 1969, data are those published in Trade of Canada, Imports, Cat. No. 65-007, without conversion.

TABLE 31. DISTRIBUTION OF SHIPMENTS OF MANUFACTURING PLANTS IN WOOD AND PAPER AND ALLIED INDUSTRIES, BY TYPE OF BUYER, CANADA, 1961

Data based on Manufacturing Industries, Channels of Distribution, Shipments of Canadian Manufacturing Plants Distributed by Type of Buyer, Bulletin SI-1, 1966, Census of Canada, 1961. The value of shipments includes all manufacturing plants except smaller firms. The coverage for wood industries and paper and allied industries was 85 and 98% respectively. The type of buyer classified as "branches" includes wholesale and retail branch outlets as well as foreign branches and branch manufacturing plants in Canada.

TABLE 32. ESTIMATES OF CONSUMPTION OF PAPER AND WOOD PACKING CONTAINERS AND SUPPLIES AND OF ALL PACKING SUPPLIES IN MANUFACTURING INDUSTRIES, CANADA, 1962

Data based on Consumption of Containers and Other Packaging Supplies by the Manufacturing Industries, D.B.S., Cat. No. 31-502, and Manufacturing Industries of Canada, Section A, 1962, D.B.S., Cat. No. 31-203.

TABLE 33. ESTIMATES OF CONSUMPTION OF PAPER AND WOOD PACKING CONTAINERS AND SUPPLIES, AND OF ALL PACKING SUPPLIES IN MANUFACTURING INDUSTRIES, CANADA, 1966

Data based on Consumption of Containers and Other Packaging Supplies by the Manufacturing Industries, Special Statement, 1966, D.B.S., and Annual Census of Manufacturers, 1966, D.B.S., Cat. No. 31-201P.

TABLE 34. DELIVERIES OF ROUNDWOOD PER MAN-HOUR PAID IN THE LOGGING INDUSTRY, BY PROVINCE AND REGION, 1963-1968

Calculations based on data reported in Logging, D.B.S., 25-201. Calculations exclude Prince Edward Island and the Yukon and Northwest Territories, for which data on man-hours are not available in various years.

Estimates of "deliveries per man-hour paid" were derived by dividing estimated shipments of roundwood by establishments in the logging industry proper (exclusive of wood purchased through inter company transfers), by man-hours paid to production and related workers (non salaried). Man-hours required to deliver roundwood produced within the industry proper, would be somewhat lower than those reported for delivery of total shipments (including purchased roundwood). This is compensated to some extent by man-hours worked by working owners and partners, and also by work such as trucking that is contracted out. The estimates are therefore approximate but are reasonably accurate indicators of trends.

The term "roundwood" as reported by the logging industry includes logs and bolts, pulpwood, posts and piling, round mining timber, fence posts and fuelwood cut as marketable timber. Excluded are fence rails and wood for charcoal. In general, logging operations cutting less than 60M cubic feet of logs per year are excluded from the calculations.

TABLE 35. ESTIMATES OF OUTPUT OF LUMBER PER MAN-HOUR PAID IN SAWMILLS AND PLANING MILLS, BY PROVINCE, CANADA, 1963-1968

Calculations based on production reported in Canadian Forestry Statistics, D.B.S., Cat. No. 25-202 and Sawmills and Planing Mills, D.B.S., Cat. No. 35-204, starting with the 1964 issue.

Output includes both hardwood and softwood lumber.

Estimates of "output per man-hour paid" were derived by dividing lumber produced by establishments in the lumber industry proper (exclusive of lumber purchased through inter company transfers), by man-hours paid to production and related workers (non salaried). Man-hours required to produce lumber in the industry proper would be somewhat lower than those reported for total production within the industry (including lumber purchased for drying and planing). This is compensated to an extent by man-hours worked by working owners and partners, and also by work such as trucking that is contracted out. The estimates are therefore approximate but are reasonably accurate indicators of trends.

TABLE 36. ESTIMATES OF VALUES PER CUNIT OF DELIVERIES OF ROUNDWOOD BY THE LOGGING INDUSTRY, BY PROVINCE AND REGION, CANADA, 1963-1968

Calculations based on data reported in Logging, D.B.S., Cat. No. 25-201.

Estimates presented in this table show trends in laid down costs rather than the market values of roundwood deliveries to wood processing

plants. They reflect a number of factors that may include the following: (1) deliveries may be made to destinations intermediate between logging operations and processing establishments; (2) some establishments that have integrated logging and wood-processing operations, may report values at intra company transfer values that exclude depreciation allowances on logging equipment and various overhead costs, rather than on the basis of actual costs; and (3) alternately, some logging companies purchase round-wood from other reporting logging companies, and the values the purchasing firms report will include mark ups charged by original logging companies at points of sale.

TABLE 37. ESTIMATES OF VALUES PER CUNIT OF PULPWOOD AND WOOD RESIDUE USED IN PULP AND PAPER MILLS, BY REGION, CANADA, 1961-1968

Calculations based on data reported in Pulp and Paper Mills, D.B.S., Cat. No. 36-204.

These estimates represent trends in laid-down costs at mills rather than market values of wood consumed. They differ from market prices since they may reflect factors such as the following: (1) some establishments that have logging operations integrated with pulp and paper mills may report values at intra company transfer values that exclude depreciation of logging equipment and various overhead costs; (2) wood may be landed at mills in various stages of finishing (e.g. peeled, not peeled, in chips).

TABLE 38. ESTIMATES OF CAPITAL AND REPAIR EXPENDITURES IN LOGGING AND IN WOOD AND PAPER AND ALLIED INDUSTRIES, CANADA, 1963-1970

Data obtained from Private and Public Investment in Canada, Department of Industry, Trade and Commerce, and D.B.S., Cat. No. 61-205.

TABLE 39. AVERAGE HOURLY EARNINGS OF WAGE EARNERS IN WOOD AND PAPER AND ALLIED INDUSTRIES, BY REGION, CANADA, 1962-1969

Data obtained from Review of Man-Hours and Hourly Earnings, 1957-1967 and 1966-1969, D.B.S., Cat. No. 72-202.

Earnings are based on returns from establishments with 20 or more employees in any month of the year.

TABLE 40. AVERAGE WEEKLY HOURS OF WORK OF WAGE EARNERS IN WOOD AND PAPER AND ALLIED INDUSTRIES, BY REGION, CANADA, 1962-1969

Data obtained from Review of Man-Hours and Hourly Earnings, 1957-1967 and 1966-1969, D.B.S., Cat. No. 72-202.

Reporting establishments are those noted for Table 39.

TABLE 41. AVERAGE WEEKLY WAGES AND SALARIES IN LOGGING AND IN WOOD AND PAPER AND ALLIED INDUSTRIES, BY REGION, CANADA, 1962-1969

Data obtained from Review of Employment and Average Weekly Wages and Salaries, 1957-1967 and 1966-1969, D.B.S., Cat. No. 72-201.

Reporting establishments are those noted for Table 39.

TABLE 42. EMPLOYMENT INDEXES IN LOGGING AND IN WOOD AND PAPER AND ALLIED INDUSTRIES, BY REGION, CANADA, 1962-1969

Data obtained from Review of Employment and Average Weekly Wages and Salaries, 1957-1967 and 1966-1969, D.B.S., Cat. No. 72-201.

Reporting establishments are those noted for Table 39.

TABLE 43. SALARIES AND WAGES AS A PERCENT OF VALUE ADDED BY PRODUCTION IN LOGGING, AND IN WOOD AND PAPER AND ALLIED INDUSTRIES, CANADA, 1961-1968

Calculations for logging based on data in Canadian Forestry Statistics, D.B.S., Cat. No. 25-202, and for wood industries and paper and allied industries, on data in Manufacturing Industries of Canada, Section A, D.B.S., Cat. No. 31-203.

TABLE 44. INDUSTRY SELLING-PRICE INDEXES OF WOOD INDUSTRIES, CANADA, 1961-1969

Data obtained from Industry Selling Price Indexes, 1956-1968, D.B.S., Cat. No. 62-528, January 1970, and for the year 1969 from Prices and Price Indexes, D.B.S., Cat. No. 62-002.

TABLE 45. INDUSTRY SELLING-PRICE INDEXES OF SELECTED SOFTWOOD LUMBERS, BY REGION, CANADA, 1961-1969

Data obtained from Industry Selling Price Indexes, 1956-1968, D.B.S., Cat. No. 62-528 and for the year 1969 from Prices and Price Indexes, D.B.S., Cat. No. 62-002.

TABLE 46. INDUSTRY SELLING-PRICE INDEXES OF SELECTED HARDWOOD LUMBERS AND FLOORING, EASTERN CANADA, 1961-1969

Data obtained from Industry Selling Price Indexes, 1956-1968, D.B.S., Cat. No. 62-528 and for the year 1969 from Prices and Price Indexes, D.B.S., Cat. No. 62-002.

TABLE 47. INDUSTRY SELLING-PRICE INDEXES OF POLES AND CROSS ARMS USED IN TRANSMISSION LINES AND OF POLES USED IN DISTRIBUTION SYSTEMS, CANADA, 1961-1969

Data obtained from Price Indexes of Electrical Utility Construction, 1956-1965, D.B.S., Cat. No. 62-526, and for the period 1966-1969 from Service Bulletin, Energy Statistics, D.B.S., Cat. No. 57-002.

TABLE 48. INDUSTRY SELLING-PRICE INDEXES OF PAPER AND ALLIED INDUSTRIES, CANADA, 1961-1969

Data obtained from Industry Selling Price Indexes, 1956-1968, D.B.S., Cat. No. 62-528, and for the year 1969 from Prices and Price Indexes, D.B.S., Cat. No. 62-002.

TABLE 49. INDUSTRY SELLING-PRICE INDEXES OF SELECTED PRODUCTS IN THE PAPER AND ALLIED INDUSTRIES, CANADA, 1961-1969

Data obtained from Industry Selling Price Indexes, 1956-1968, D.B.S., Cat. No. 62-528 and for the year 1969 from Prices and Price Indexes, D.B.S., Cat. No. 62-002.

TABLE 50. PRICE INDEX NUMBERS OF SELECTED RESIDENTIAL-BUILDING MATERIALS AND AGGREGATE INDEX OF NONRESIDENTIAL-BUILDING MATERIALS, CANADA, 1961-1969

Revised series obtained from Prices and Price Indexes, D.B.S., Cat. No. 62-002, May 1970.



Environment
Canada

Forestry
Service

Environnement
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